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Region 2 RAC2 Remedial Action Contract

Technical Memorandum Baseline Remedial Action/Round 5 Well Sampling

Old Roosevelt Field Contaminated
Groundwater Site
Remedial Action
Village of Garden City, New York

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**CDM
Smith**

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Acronyms

bgs	below the ground surface
CDM Smith	CDM Federal Programs Corporation
Cis-1,2-DCE	cis-1,2-dichloroethene
DO	dissolved oxygen
EGIS	Environmental Geographic Information System
Eh	oxygen reduction potential
EPA	Environmental Protection Agency
FCR	Field Change Notice
HDPE	high-density polyethylene
ID	inner diameter
IDW	investigation derived waste
MCL	maximum contaminant level
mg/L	milligram per liter
mL	milliliter
msl	mean sea level
NTU	Nephelometric turbidity units
NYSDOH	New York State Department of Health
PCE	tetrachloroethene
PVC	polyvinyl chloride
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance/quality control
RA	remedial action
RAC	Remedial Action Contract
TAL	Target Analyte List
TCE	trichloroethene
TCL	Target Compound List
TDS	total dissolved solids
TKN	total Kjehldahl nitrogen
the site	the Old Roosevelt Field Contaminated Groundwater Site
TSOP	Technical Standard Operating Procedure
UTD	Uni-tech Drilling
VOC	volatile organic compound
1,1-DCE	1,1-dichloroethene
µg/L	microgram per liter

Section 1

Introduction

CDM Federal Programs Corporation (CDM Smith) received Work Assignment 023-RARA-02PE under the Remedial Action Contract (RAC) (contract number EP-W-09-002) to perform the Remedial Action (RA) at the Old Roosevelt Field Contaminated Groundwater Site (the Roosevelt site), located in the Village of Garden City, Nassau County, New York, for the Environmental Protection Agency (EPA). In support of the ongoing RA at the site, additional monitoring wells were installed. Other recent field work included installation of three sets of paired monitoring wells to monitor the RA pump and treat system. Following installation of the new monitoring wells, baseline RA/Round 5 sampling was conducted of all wells and ports.

1.1 Purpose of Technical Memorandum

The purpose of this technical memorandum is to present the results of the additional drilling and baseline RA/Round 5 sampling at the Roosevelt site. The following monitoring wells were installed:

- One multiport monitoring well, completed with 10 ports (SVP-14) to monitor the area between SVP-13 and SVP-8 where no wells were previously installed.
- Two single-screen monitoring wells (MW-8D and MW-12S) to monitor additional parts of the aquifer at two locations with existing multiport wells.
- Three paired monitoring wells in the Roosevelt Field mall area to monitor operation of the pump and treat system (MW-1S, MW-1I, MW-2S, MW-2I, MW-3S, and MW-3I)

Following installation of the additional monitoring wells, baseline RA/Round 5 samples were collected from 25 monitoring wells: 14 multiport wells (SVP-1 through SVP-14 with a total of 117 ports), 11 single-screen wells (MW-1S, MW-1I, MW-2S, MW-2I, MW-3S, MW-3I, MW-8D, MW-12S, N-10019, N-10020, and N-8068), and 2 supply wells (No. 10 and No. 11). Groundwater samples were analyzed for the following fractions:

- Trace-level Target Compound List (TCL) volatile organic compounds (VOCs) – All ports and monitoring well samples (130 samples total)
- Target Analyte List (TAL) inorganics (filtered and unfiltered [total]) – SVP-11 ports 2, 4, 7, and 10; SVP-14 ports 2, 4, 7, and 10; MW-12S (9 filtered and 9 unfiltered samples total)
- Total dissolved solids (TDS), ammonia, total Kjehldahl nitrogen (TKN), and hardness – SVP-14 ports 2, 4, 7, and 10 (4 samples for each parameter)

1.2 Site Description

The Roosevelt site is an area of groundwater contamination within the Village of Garden City, in central Nassau County, New York (Figure 1-1). The site is located on the eastern side of Clinton Road,

south of the intersection with Old Country Road; it includes the area of the former Roosevelt Field airfield (Figure 1-2). The former Roosevelt Field airfield area is currently developed as a large retail shopping mall with a number of restaurants, and a movie theater. A thin strip of open space along Clinton Road (known as Hazelhurst Park) serves as designated parkland and a buffer with the residential community. Several office buildings (including Garden City Plaza) are on the western perimeter of the mall and share parking space with the mall. Two recharge basins are directly east and south of the mall area. The eastern basin, Pembrook, is on property owned by the mall. The basin to the south is Nassau County recharge basin # 124.

Three extraction wells were installed for the RA. These wells are shown on Figure 2-1.

1.3 Technical Memorandum Organization

This technical memorandum is organized as described below. The tables and figures are presented at the end of the report.

- Section 1 Introduction - Presents the purpose of the technical memorandum and provides a brief site description.
- Section 2 Supplemental Investigation Activities - Describes the drilling methodology and sampling rationale for the additional monitoring wells and for the baseline RA/Round 5 sampling.
- Section 3 Groundwater Sampling Results – Presents and discusses the baseline RA/Round 5 sample results, including the horizontal and vertical extent of VOC contamination in groundwater. This section includes a comparison of five rounds of monitoring well samples. The groundwater screening criteria for the five site-related contaminants are listed.
- Section 4 References

Section 2

Supplemental Investigation Activities

2.1 Supplemental Groundwater Investigation

The supplemental groundwater investigation included installation of one multiport monitoring well, two single-screen monitoring wells, and baseline RA/Round 5 groundwater sampling. In addition, six single-screen monitoring wells were installed in the Roosevelt Field mall area as part of the RA. The purpose of the wells is summarized below.

- SVP-14 – The multiport well was installed in a data gap area between Commercial Avenue to the north and the Hempstead wellfield to the south. The purpose of the well is to determine how far downgradient the groundwater contamination extends from the mall area.
- MW-8D – This single-screen well was installed at the same location as SVP-8, just north of the Hempstead wellfield. The MW-8D screen interval is deeper than the deepest port in SVP-8 and is intended to determine if deep contamination identified in the wellfield is from the Roosevelt site, or other identified hazardous waste sites that are between the mall and the Hempstead wellfield.
- MW-12S – This single-screen well was installed at the same location as SVP-12, south of Stewart Avenue. SVP-12 was completed with 6 ports in the deeper zones of the aquifer. The shallower screen in MW-12S is intended to determine if shallow groundwater contamination is moving downgradient from the mall area.
- RA monitoring wells – Six single-screen wells (MW-1S, MW-1I, MW-2S, MW-2I, MW-3S, and MW-3I) were installed in the Roosevelt Field mall area to monitor the RA pump and treat system.

Figure 2-1 shows the locations of the new monitoring wells and all wells sampled during the baseline RA/Round 5 groundwater sampling event. All field activities were conducted in accordance with the following documents:

- CDM Smith RD Updated Work Plan, dated February 12, 2009
- CDM Smith RD Final Quality Assurance Project Plan (QAPP), dated March 14, 2008
- CDM Smith RD Final QAPP Addendum, dated February 19, 2009
- CDM Smith RA Final QAPP, dated May 24, 2010
- CDM Smith Field Change Request (FCR) No. 8, dated January 17, 2011
- CDM Smith FCR No. 9, dated July 20, 2011
- CDM Smith Health and Safety Plan Addendum, dated June 19, 2008

FCR forms are presented in Appendix A. FCR No. 8 describes the drilling and completion of the three additional monitoring wells and documents the wells to be sampled for the baseline RA/Round 5 event and the analyses to be completed for each well/port. FCR No. 9 modified the shallowest port in SVP-14. The forms describe deviations, the reason for the deviation, and the recommended modification. The deviations were discussed with the EPA remedial project manager, and were agreed upon by the CDM Smith project manager, task manager, and the field team leader. None of the changes affected the project objectives or the representativeness, completeness, precision, or accuracy of the data collected in the field. The FCRs are discussed in the following sections, as appropriate.

2.1.1 Multiport Monitoring Well Installation

One additional multiport monitoring well (SVP-14) was installed at the intersection of Garden Street and College Place in the Village of Garden City, New York. It is located in a residential neighborhood between multiport wells SVP-8 and SVP-12, installed during previous phases of work at the Roosevelt site.

Borehole Drilling and Well Screen Completion

CDM Smith contracted Uni-tech Drilling (UTD), Inc. to perform the monitoring well installation. A multiport monitoring well construction diagram for SVP-14 is included in Appendix B.

The drilling program included installation of a borehole for subsequent Westbay multiport well installation. SVP-14 well installation consisted of borehole drilling, surface casing installation, casing/screen installation, and Westbay well installation. The borehole was drilled by advancing a nominal 14-inch diameter drill bit, via mud rotary drilling methods, to a depth of approximately 80 feet below the ground surface (bgs). A 10-inch diameter carbon steel surface casing was installed to a depth of 80 feet bgs and grout was pumped into the borehole annulus via tremie pipe from 80 feet and extending up to the surface. The SVP-14 borehole was completed by advancing a nominal 10-inch diameter drill bit, via mud rotary drilling, to a depth of 545 feet bgs. After drilling to the total depth, a 4-inch inner diameter (ID) Type 304, Schedule 10 stainless steel casing and screen assembly was installed in the borehole. The SVP-14 casing/screen assembly has 10 five-foot length, 10-slot, stainless steel well screens set at the following depth intervals:

- Port 1: 530 feet - 535 feet
- Port 2: 490 feet - 495 feet
- Port 3: 410 feet - 415 feet
- Port 4: 360 feet - 365 feet
- Port 5: 300 feet - 305 feet
- Port 6: 250 feet - 255 feet
- Port 7: 185 feet - 190 feet
- Port 8: 145 feet - 150 feet
- Port 9: 100 feet - 105 feet
- Port 10: 85 feet - 90 feet

The SVP-14 borehole was backfilled by placing Filpro #1 sand into the borehole annulus via tremie pipe, from the bottommost depth and extending upward a minimum of 5 feet above the top of the bottommost screen. A 1:1 mixture of bentonite and Filpro #1 sand slurry was pumped into the borehole annulus, via tremie pipe, above the Filpro #1 sand and extending to 10 feet below the bottom of the next well screen. Subsequently, Filpro #1 sand

was added to the borehole annulus, as above, followed by placement of the bentonite/sand slurry (described above), for each well screen, until Filpro #1 sand was five feet above the uppermost screen zone. The bentonite/sand slurry was placed in accordance to FCR #6, completed during a previous investigation event. At the top of the borehole (above all the screens) a 5-foot thick bentonite/sand slurry was placed above the Filpro #1 sand followed by grout extending up to the surface. A flush-mount protective casing and well pad were installed at the surface and the top of the well was fitted with a 4-inch diameter expandable locking cap.

Well/Screen Development

Well development of each stainless steel, 10-slot outer screen well zone was monitored by CDM Smith as it was performed by UTD personnel. A minimum of three well volumes of water was purged from each of the 10 well screens, using air lift development methods (FCR #7, completed during a previous investigation event).

During well development, CDM Smith measured water quality parameters of pH, temperature, specific conductance, dissolved oxygen (DO), oxygen reduction potential (Eh), and turbidity. Well development was complete when purge water had a turbidity reading of less than 10 Nephelometric turbidity units (NTU) and other parameters had stabilized to within 10 percent for three consecutive readings. Data obtained during the outer screen development were recorded on well development data sheets, included as Appendix C.

Westbay Port Installation

The multiport monitoring well was installed by Westbay personnel, assisted by UTD and CDM Smith. The 1.5-inch diameter Westbay multiport well equipment was installed inside the 4-inch diameter stainless steel well casing. Measurement ports were set at depths within each outer well screen. Pumping ports were set 10 feet below the measuring ports.

Westbay multiport wells were comprised of sections of polyvinyl chloride (PVC) riser casings, packers, measurement ports, pumping ports, couplers, magnetic collars, and end caps. Westbay well sections were attached via PVC couplers and were secured using plastic wire ties. Following every connection, each joint was pressure tested to ensure that the joint seal was properly secure, prior to lowering into the well for installation. Each multiport well was constructed piece-by-piece from the bottom to the top as each section was lowered into the borehole, following joint testing.

Joint testing consisted of inserting portable mini-packers into the interior of each well joint of two connected PVC sections. The mini-packers were inflated with water to secure them against the PVC well. Westbay personnel checked the pressure reading of the joint to ensure that the parts were competent and properly connected. Following joint testing, the packers were deflated and removed, and the PVC well section was lowered inside the stainless steel well. Subsequently, the next Westbay PVC section was added to the well assembly and was joint tested, as above. Following installation of the Westbay well inside the stainless steel well casing, water within the well screen zones was allowed to equilibrate for a period of approximately 30 minutes.

Following equilibration, pre-inflation testing of the Westbay well was performed using the Westbay sampling tool. The Westbay sampling tool was lowered inside the Westbay well and attached to each measurement port and activated to record pressure readings inside and outside the well casing. Following pre-inflation testing, the sampling tool was retracted and the Westbay well packers were inflated with water. Following packer inflation, post-inflation testing was conducted using the Westbay tool, as above. Pre-inflation and post-inflation testing data were recorded on Westbay field data sheets, included in Appendix D.

Following multiport monitoring well installation, well development of each pumping port zone was performed by CDM Smith. Each pumping port was opened using the Westbay open/close tool. Subsequently, 1-inch diameter high-density polyethylene (HDPE) tubing was lowered into the Westbay well approximately 20 feet

into the water column. A stainless steel foot valve was connected to the bottom of the tubing. The HDPE tubing was affixed to a Waterra pump at the surface. The Waterra pump was activated causing the tubing to rise and fall repeatedly to purge the well. Water was purged from the well through the HDPE tubing and discharged directly into 5-gallon buckets. Water quality parameters were measured during purging. Well development was complete when three volumes of water were purged from each zone. Well development field data were recorded on Westbay data sheets and water quality data sheets included as Appendix C.

2.1.2 Single-Screen Monitoring Well Installation

Two single-screen monitoring wells (MW-8D and MW-12S) were installed at locations with existing multiport wells in order to monitor additional zones of the aquifer. MW-8D and MW-12S are adjacent to SVP-8 and SVP-12, respectively. Monitoring well construction diagrams for MW-8D and MW-12S are included in Appendix B. Six single-screen monitoring wells (MW-1S, MW-1I, MW-2S, MW-2I, MW-3S, and MW-3I) were completed as part of the RA to monitor the performance of the pump and treat system.

Borehole Drilling and Well Screen Completion

Single-screen well installation consisted of borehole drilling, surface casing installation and casing/screen installation. Boreholes were drilled by advancing a nominal 12-inch diameter drill bit, via mud rotary drilling methods, to a depth of approximately 80 feet bgs. An 8-inch diameter carbon steel surface casing was installed to a depth of 80 feet and grout was pumped into the borehole annulus via tremie pipe from 80 feet and extending up to the surface. Boreholes were completed by advancing a nominal 8-inch diameter drill bit, via mud rotary drilling, to the required depth for each monitoring well. Subsequently, a 4-inch ID Type 304, Schedule 10 stainless steel casing and well screen assembly was installed into the boreholes. The RA monitoring wells were completed with 10-foot length, 10-slot, stainless steel well screens. MW-8D and MW-12S have 20-foot length, 10-slot, stainless steel well screens. Single-screen monitoring well screen intervals are shown on Table 2-1. Boreholes were backfilled by placing Filpro #1 sand into the borehole annulus via tremie pipe, from the bottommost depth and extending upward a minimum of three feet above the top of the well screen. Approximately two feet of Filpro #00 sand was added to the borehole annulus above the Filpro #1 sand. Finally, grout was placed into the borehole annulus from the top of the Filpro #00 sand and extending up to the surface. A flush-mount protective casing and well pad was installed at the surface of each well and the top of each well casing was fitted with a 4-inch diameter expandable and lockable cap.

Well Development

Well development was completed similar to the multiport wells described above.

2.1.3 Downhole Gamma Logging

Downhole gamma logging was performed within the 4-inch outer screen and casing at SVP-14 (prior to installation of the Westbay equipment) and MW-8D. Two natural gamma logs were run at each location: one from the top down and one from the bottom up. Logging was conducted in accordance with the Final QAPP Worksheet #17c and as described in its Appendix B Technical Standard Operating Procedure (TSOP) 3-4. The natural gamma logs are presented in Appendix B on the well construction form.

2.1.4 Groundwater Sampling

One round of groundwater samples (baseline RA/Round 5) was collected from 14 Westbay multiport wells (SVP-1 through SVP-14), 11 new and existing monitoring wells (MW-1S, MW-1I, MW-2S, MW-2I, MW-3S, MW-3I, MW-8D, MW-12S, GWX-10019, GWX-10020, and GWX-8068), and 2 municipal supply wells (Garden City wells GWP-10 and GWP-11); locations are shown on Figure 2-1. Water levels and pressure measurements were obtained prior to collecting groundwater samples as shown on Tables 2-1 and 2-2.

Background groundwater samples were collected from the upgradient multiport well, SVP-1, located north of Old Country Road, for comparison with samples from the Roosevelt Field area. SVP-1 is located approximately 500 feet due north of the mall, in an area unaffected by potential contaminants related to Roosevelt site activities. Background samples were analyzed for the same parameters as the investigation samples.

All groundwater and quality assurance/quality control (QA/QC) samples were analyzed for the following analytical fractions:

- Trace-level TCL VOCs – All ports and monitoring well samples (130 samples total)
- TAL inorganics (filtered and unfiltered) – SVP-11 (ports 2, 4, 7, and 10), SVP-14 (ports 2, 4, 7, and 10), and MW-12S (9 filtered and 9 unfiltered samples total)
- TDS, ammonia, TKN, and hardness – SVP-14 (ports 2, 4, 7, and 10) (4 samples for each parameter)

Table 2-3 summarizes the ports/wells that were sampled and their analyses for the baseline RA/Round 5 groundwater sampling event. The TAL inorganic and other water quality parameters were collected for engineering purposes and are not discussed in this technical memorandum.

Multiport Monitoring Wells

All multiport monitoring well samples were collected using Westbay sampling equipment, which included a tripod with a manual reel, an electronic sampling probe with interface unit that monitored and controlled pressure, a manual vacuum pump, and a series of four 250 milliliter (mL) stainless steel samplers. It should be noted that port 1 is at the bottom of each multiport well, with the port numbers increasing as the ports get shallower in depth.

Prior to lowering the sampling probe with the stainless steel samplers, a manual vacuum pump was used to create a vacuum in the samplers. Once the probe and tubes were lowered to the appropriate port, an air tight seal was created between the port and the sampling probe, and a correct water pressure reading was verified. This air tight seal and the vacuum forced water from the port to fill the 250 mL stainless steel samplers. A pre-printed form supplied by Westbay was completed to ensure the correct procedure was followed. Water quality parameters were collected and recorded on groundwater sampling forms, including conductivity, Eh, turbidity, pH, temperature, and DO. The completed forms are included in Appendix E. All equipment was properly decontaminated between each port to prevent cross contamination.

Conventional Monitoring Wells

Eight new single-screen monitoring wells (MW-1S, MW-1I, MW-2S, MW-2I, MW-3S, MW-3I, MW-8D, and MW-12S) and three existing Nassau County monitoring wells (GWX-8068, GWX-10019, and GWX-10020) were sampled during the baseline RA/Round 5 event.

Ten of the 11 single-screen wells were purged and sampled using a two-inch diameter submersible Grundfos pump with dedicated $\frac{3}{4}$ -inch Teflon-lined polyethylene tubing, following the site-specific, low-flow, minimum drawdown sampling procedure described in the Final QAPP Addendum. GWX-8068 was sampled from a raw water tap, before treatment. Water quality parameters DO, Eh, turbidity, pH, temperature, and conductivity were recorded during the low-flow well purging activity until parameter stabilization was achieved. Low-flow groundwater sampling sheets are included in Appendix F.

Garden City Municipal Supply Wells

Village of Garden City supply wells 10 and 11 were sampled during baseline RA/Round 5; these wells are designated as GWP-10 and GWP-11, respectively (see Figure 2-1). The water from these wells is currently treated with air strippers to remove VOC contamination. Samples were collected from taps located in the pump houses, prior to treatment.

Groundwater quality parameters DO, Eh, pH, temperature, conductivity, and turbidity were measured in the field. These measurements were recorded on Low-Flow Sampling Forms, and are presented in Appendix F.

Water levels were not collected from the Village of Garden City supply wells because they were inaccessible for water level measurement equipment.

2.2 Control of Investigation Derived Waste

Soil and water investigation derived waste (IDW) were contained and controlled during field activities. During drilling/monitoring well installation, soil cuttings and drilling mud were contained in 20-cubic yard rolloff containers. Water IDW generated during drilling consisted of decontamination rinsate and purge water from well development; all water IDW was pumped into a 21,000-gallon Adler waste tank. Rinsate collected from the decontamination pad was also pumped into the Adler tank. All IDW was sampled, transported, and disposed of in accordance with applicable regulations by Seacoast Environmental Services, a waste disposal services company under subcontract to CDM Smith.

Section 3

Groundwater Sampling Results

3.1 Approach to the Evaluation of Contamination

The main site-related contaminants in groundwater at the Roosevelt site are trichloroethene (TCE), tetrachloroethene (PCE), 1,1-dichloroethene (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), and carbon tetrachloride. Groundwater contamination discussions focus on these five contaminants.

Data from multiport wells, single-screen monitoring wells, and Village of Garden City supply wells were screened against EPA's National Primary Drinking Water Maximum Contaminant Levels (MCLs), New York State Standards and Guidance Values for Class GA Groundwater (Human Water Source), and New York State Department of Health (NYSDOH) Drinking Water Quality Standards. In the case where more than one standard or criteria existed, the lowest, or most stringent, value was used as the site-specific groundwater screening criteria. The groundwater screening criteria were presented in previous pre-remedial design reports or technical memoranda. All five main site-related contaminants have an MCL of 5 micrograms per liter ($\mu\text{g}/\text{L}$).

Analytical data were entered into the site database and then exported to an Environmental Geographic Information System (EGIS) for evaluation and graphical presentation. Groundwater sample results for organics and inorganics are presented in $\mu\text{g}/\text{L}$; wet chemistry parameters are presented in milligram per liter (mg/L).

Some of the analytical results were qualified as estimated ("J" qualifier) or rejected ("R" qualifier) during data validation. Estimated data are usable for technical evaluations. Rejected data have not been used or assessed in this technical memorandum. Rejected data represent 0.1 percent of the VOC data. The completeness goal of 90 percent was exceeded. A complete discussion of data validation, data usability, and data quality objectives (DQOs) is included in the Data Usability Report presented in Appendix G. All DQOs established in the QAPP Addendum were met. Full analytical data tables are presented in Appendix H.

3.2 Water Level Measurements

During the baseline RA/Round 5 event, the water table elevation at the site was measured at 60.03 feet above mean sea level (msl) (at SVP-1 in the north) and 44.85 feet above msl (at SVP-8 in the south); general groundwater flow is to the south. The groundwater flow gradient is approximately 0.0014. Tables 2-1 and 2-2 present water level measurements from single-screen wells and pressure measurements and water level elevations for multi-port wells, respectively. Water level elevations were used to create groundwater flow maps at four depths within the aquifer, and are presented in Figures 3-1a through 3-1d.

Water level elevation data from the multiport wells were used to evaluate the vertical hydraulic gradient at each multiport well location. In general, the multiport well elevations indicate that the vertical groundwater flow is downward; however, a few exceptions were noted. Data indicate a slight upward gradient in the bottom of SVP-5 and SVP-13.

3.3 Gamma Log Results

Downhole gamma logging was conducted at the new multiport well, SVP-14, and the new single-screen well MW-8D. Gamma logs are presented in Appendix B on the well construction forms. In general, the new gamma logs are consistent with gamma logs from the RI and previous pre-design monitoring wells.

3.4 Baseline RA/Round 5 Groundwater Results

3.4.1 Multiport Well Results

Of the five site-related contaminants, TCE and PCE were detected most frequently, and at levels exceeding screening criteria ($5 \mu\text{g/L}$) in many of the samples. TCE levels were generally higher than PCE levels, with the highest TCE concentrations in SVP-10 ($630 \mu\text{g/L}$) and SVP-9 ($330 \mu\text{g/L}$). The highest PCE was found in GWX-8068 ($350 \mu\text{g/L}$) and SVP-10 ($230 \mu\text{g/L}$). Cis-1,2-DCE and 1,1-DCE were detected less frequently, with limited exceedances. Carbon tetrachloride was detected in very few samples, at very low levels below its screening criterion. Results from the baseline/Round 5 groundwater sampling event are presented in Table 3-1 and shown on Figure 3-2.

SVP-1

SVP-1 is the background well, located upgradient of the site. No site-related VOCs exceeded screening criteria. TCE and PCE were detected in six and four ports, respectively. The highest TCE was $1.1 \mu\text{g/L}$ in the deepest port and the highest PCE was $0.77 \mu\text{g/L}$ in port 3. 1,1-DCE at $0.26 \mu\text{g/L}$ was detected in port 1. Carbon tetrachloride and cis-1,2-DCE were not detected in any port. No site-related VOCs were detected in the four shallowest ports (ports 7 through 10). The contaminant levels in the upgradient background well are significantly lower than those found in downgradient multiport and single-screen monitoring wells, and Village of Garden City supply wells, and indicate background levels are outside the influence of site-related contamination.

SVP-2

SVP-2 is located just west of 100 Ring Road and the former cooling water well N-8050. PCE, TCE, and cis-1,2-DCE were detected; 1,1-DCE and carbon tetrachloride were not detected. PCE was detected in all except the top port, but did exceed its screening criterion ($5 \mu\text{g/L}$). TCE exceeded its screening criterion ($5 \mu\text{g/L}$) in all but the top port. TCE ranged from $0.36 \mu\text{g/L}$ to $45 \mu\text{g/L}$, with the highest level in port 5. Cis-1,2-DCE was detected in all except the top port and exceeded its screening criterion ($5 \mu\text{g/L}$) in ports 3 through 6. Detections ranged from 0.65 to $9 \mu\text{g/L}$.

SVP-3

SVP-3 is located in the Roosevelt Field mall parking lot, east of the Garden City Plaza office complex. TCE exceeded its screening criterion in the bottom three ports ranging from $13 \mu\text{g/L}$ to $23 \mu\text{g/L}$; the highest level was in port 2. PCE was detected in three ports, 1,1-DCE was detected in the bottom two ports, and cis-1,2-DCE was detected in the bottom three ports, all at levels below screening criteria. Carbon tetrachloride was not detected.

SVP-4

SVP-4 is located just west of 200 Garden City Plaza. During previous sampling rounds, this well contained the highest contaminant levels. The baseline RA/Round 5 detections included TCE in all ports, ranging from 0.36 µg/L to 55 µg/L in port 6. All concentrations except in the shallowest port exceeded the screening criterion. PCE was detected in all ports, ranging from 0.23 µg/L in the shallowest port to 120 µg/L in ports 5 and 6. 1,1-DCE was only detected in port 1 (deepest) at 1.5 µg/L. Cis-1,2-DCE was detected below its screening criterion in all except the top port; levels ranged from 0.25 µg/L to 4.4 µg/L. Carbon tetrachloride was detected below its screening criterion in the two deepest ports.

SVP-5

SVP-5 is located in Garden City Plaza, southeast of SVP-4. TCE was detected in all except the top port, and exceeded its criterion (5 µg/L) in ports 1, 2, 4, 5, and 6, with levels ranging from 0.14 µg/L to 41 µg/L (port 2). PCE was detected in seven ports ranging from 0.21 µg/L to 0.99 µg/L. 1,1-DCE was only detected in port 6 (0.38 µg/L). Cis-1,2-DCE was detected in the bottom six ports ranging from 0.4 µg/L to 1.9 µg/L. Carbon tetrachloride was detected in the bottom two ports at 0.25 µg/L (port 1) and 1 µg/L (port 2).

SVP-6

SVP-6 is located in a residential area on Meadow Street and was installed as one of two sentinel wells for the Hempstead well field. No site-related VOCs exceeded their screening criteria. TCE was detected in five of six ports, ranging from 0.35 µg/L to 2.3 µg/L. PCE was not detected. 1,1-DCE was detected in ports 4 and 6 at 0.69 µg/L and 2 µg/L, respectively. Cis-1,2-DCE was detected in five of the six ports, ranging from 0.16 µg/L to 4.9 µg/L (port 3). Carbon tetrachloride was detected in the deepest port at 0.24 µg/L.

SVP-7

SVP-7 is located downgradient of the mall in a residential area west of Commercial Avenue, along the former Long Island Railroad tracks. This well is side-gradient to the groundwater flow from the mall area. TCE was detected in five of six ports and exceeded its screening criterion in ports 1, 2, and 3. Concentrations ranged from 0.24 µg/L to 43 µg/L (port 2). PCE was detected in four of six ports and exceeded its criterion in the bottom two ports. Concentrations ranged from 0.44 µg/L to 45 µg/L (port 2). 1,1-DCE was detected and exceeded its criterion in the bottom two ports (15 µg/L in port 1 and 17 µg/L in port 2). Cis-1,2-DCE was detected below its screening criterion in the bottom three ports, ranging from 0.34 µg/L to 1.5 µg/L. Carbon tetrachloride was not detected.

SVP-8

SVP-8 is the furthest downgradient multiport well from the Roosevelt Field mall area and is located in a residential area on the corner of Clinton Road and Meadow Street. This well is one block north (upgradient) of the Hempstead well field and is the main sentinel well for the well field. It is west of SVP-6. PCE was detected in all 6 ports. PCE exceeded its screening criterion in all but the top port; exceedances ranged from 6.6 µg/L (port 1) to 29 µg/L (port 5). TCE was detected in all six ports but did not exceed its screening criterion; concentrations ranged from 0.24 µg/L to 4.8 µg/L (port 2). Cis-1,2-DCE was detected in five of six ports at levels below its screening criterion. Concentrations ranged from 0.16 µg/L to 0.61 µg/L. 1,1-DCE and carbon tetrachloride were not detected.

SVP-9

SVP-9 is upgradient of SVP-4 in the mall area, northwest of 100 Ring Road. It was installed to determine the northern boundary of the VOC plume. TCE was detected in all 10 ports and exceeded its screening criterion in 4

ports (ports 6 through 9); concentrations ranged from 1.5 µg/L to 330 µg/L (port 8). Port 6 (210 µg/L) had the second highest detection. PCE was detected in all except the top and bottom ports and exceeded its screening criterion in ports 4 through 7; concentrations ranged from 0.31J µg/L to 19 µg/L (port 5). 1,1-DCE was detected in 6 of 10 ports but did not exceed its screening criterion. Concentrations ranged from 0.37J µg/L to 3.7 µg/L (port 2). Cis-1,2-DCE was detected in 7 of 10 ports and exceeded its screening criterion in ports 6 and 8. Concentrations ranged from 0.21J µg/L to 25 µg/L (port 6). Carbon tetrachloride was not detected.

SVP-10

SVP-10 is located on the west side of the Garden City Plaza office complex (near existing well GWX-10019). TCE was detected in all 10 ports and exceeded its screening criterion in 7 ports. Concentrations ranged from 0.58 µg/L to 630 µg/L (port 2). The second highest detection was 77 D µg/L in port 4. PCE was detected in seven ports and exceeded its criterion in ports 2, 3, and 4, ranging from 0.55 µg/L to 230 µg/L (port 3). 1,1-DCE was only detected in port 3 at 6.1 J µg/L. Cis-1,2-DCE was detected in 9 of 10 ports and exceeded its criterion in five ports. Concentrations ranged from 0.13J µg/L to 73 µg/L (port 2). Carbon tetrachloride was detected in port 2 (0.74 µg/L) and port 7 (0.16 J µg/L).

SVP-11

SVP-11 is located near the corner of Clinton Road and Stewart Avenue, on the Stewart school property. TCE was detected in 9 of the 10 ports and exceeded its screening criterion in 7 ports. Concentrations ranged from 0.3J µg/L to 230 µg/L (port 1). PCE was detected in eight ports and exceeded its criterion in one port. Concentrations ranged from 0.39J µg/L to 42 µg/L (port 2). 1,1-DCE was only detected in port 2 at 4.3 µg/L. Cis-1,2-DCE was detected in eight ports and exceeded its criterion in five ports; concentrations ranged from 0.14 J µg/L to 66 µg/L (port 1). Carbon tetrachloride was detected in ports 1, 2, and 5, ranging from 0.29J µg/L to 0.61 µg/L.

SVP-12

SVP-12 is located near the corner of Clinton Road and Commercial Avenue, approximately 1,300 feet south (downgradient) of SVP-11. TCE was detected in all six ports and exceeded its screening criterion in five ports, ranging from 1 µg/L to 90 µg/L (port 3). PCE was detected in five ports but only marginally exceeded its criterion in one port, ranging from 0.8 µg/L to 5.1 µg/L (port 4). 1,1-DCE was detected in ports 3 and 4 (0.72 µg/L and 0.75 µg/L, respectively). Cis-1,2-DCE was detected in five ports and exceeded its criterion in three ports. Concentrations ranged from 1.8 µg/L to 13 µg/L (ports 3 and 4). Carbon tetrachloride was detected in ports 3, 4, and 6, ranging from 0.17J µg/L to 0.72 µg/L.

SVP-13

SVP-13 is located approximately 1,200 feet east/northeast of SVP-12, on the south side of Stewart Avenue in a grassy strip in front of the FedEx building. TCE was detected in all six ports and exceeded its screening criterion in five ports, ranging from 3.2 µg/L to 19 µg/L (ports 4 and 5). PCE was detected in all six ports but only exceeded its criterion in two ports. Concentrations ranged from 1.2 µg/L to 9.2 µg/L (port 4). 1,1-DCE was detected in ports 2 and 3 (0.11J µg/L and 1.9 µg/L, respectively). Cis-1,2-DCE was detected in five ports but did not exceed its criterion. Levels ranged from 0.51 µg/L to 1.3 µg/L (port 5). Carbon tetrachloride was detected in port 3 at 0.58 µg/L.

SVP-14

SVP-14 is located in the residential area between SVP-12 and SVP-8 near the intersection of Garden Street and College Place. TCE was detected in the bottom five ports and exceeded its screening criterion in three ports. Concentrations ranged from 0.38J µg/L to 60 µg/L (port 1). PCE was detected in seven ports but did not exceed its criterion, ranging from 0.25J µg/L to 4 µg/L (port 5). 1,1-DCE was not detected and cis-1,2-DCE was detected

in three lower ports, ranging from 1.7 µg/L to 9.7 µg/L (port 1). Only the deepest port exceeded the screening criterion. Carbon tetrachloride was detected in the two deepest ports at 0.23J µg/L and 0.2 J µg/L.

3.4.2 Supply Well and New and Existing Single-Screen Monitoring Well Results

Two supply wells and 11 new and existing monitoring wells were sampled. Results from the baseline RA/Round 5 groundwater sampling event are presented in Table 3-1. TCE and PCE results are shown on Figure 3-2.

Supply Wells

Village of Garden City supply wells No. 10 and No. 11 have historically contained high levels of site-related contaminants since they were first sampled in the 1970s, although levels have shown a decreasing trend since the mid-1990s. Both wells contained TCE and PCE above their screening criteria and supply well No. 11 had cis-1,2-DCE above its criterion. Sample results are listed as GWP-10 and GWP-11.

TCE was detected at 25 µg/L in No. 10 and 96 µg/L in No. 11. PCE was detected at 54 µg/L in supply well No. 10 and 130 µg/L in supply well No. 11. 1,1-DCE was detected at 3.4J µg/L and 2.5 µg/L, respectively. Cis-1,2-DCE was above the screening criterion at supply well No. 11 (9.8 µg/L) but below in GWP-10 (3.1J µg/L). Carbon tetrachloride was detected at 0.45J µg/L and 0.21J µg/L, respectively.

New Monitoring Wells

MW-8D is at the same location as SVP-8 and is screened below the deepest port at 515 to 535 feet bgs. TCE was detected at 0.97 µg/L, well below the screening criterion, and PCE, 1,1-DCE, cis-1,2-DCE, and carbon tetrachloride were not detected.

MW-12S is at the same location as SVP-12 and is screened in the shallower part of the aquifer from 90 to 110 feet bgs. TCE and PCE were detected at 0.21J µg/L and 0.45J µg/L, respectively. 1,1-DCE, cis-1,2-DCE, and carbon tetrachloride were not detected.

Existing Monitoring Wells

GWX-10019 is a Nassau County monitoring well located just west of the Garden City Plaza office complex and is screened from 223 to 228 feet bgs. TCE exceeded its screening criterion at 98 µg/L and PCE and cis-1,2-DCE marginally exceeded their criteria at 5.3J µg/L and 6.7J µg/L, respectively. 1,1-DCE and carbon tetrachloride were not detected.

GWX-10020 is a Nassau County monitoring well located just south of the Garden City Plaza office complex and is screened from 185 to 190 feet bgs. TCE and PCE were detected at trace levels, at 0.25J µg/L and 0.3J µg/L. 1,1-DCE, cis-1,2-DCE, and carbon tetrachloride were not detected.

GWX-8068 is a Nassau County monitoring well located at 585 Stewart Avenue near the southern entrance to the Roosevelt Field mall (South Ring Road) and is screened from 265 to 290 feet bgs. TCE, PCE, 1,1-DCE, and cis-1,2-DCE exceeded their screening criteria at 120 µg/L, 350 µg/L, 10 µg/L, and 6 µg/L, respectively. Carbon tetrachloride was detected at 0.36J µg/L.

RA Monitoring Wells

The MW-1 monitoring well cluster is east of 400 Garden City Plaza; the shallow well is screened from 235 to 245 feet bgs and the intermediate well is screened from 305 to 315 feet bgs. In MW-1S TCE exceeded its screening criterion at 340 µg/L; PCE was detected at 2.3 µg/L, while cis-1,2-DCE marginally exceeded its criterion at 5.7 µg/L. 1,1-DCE and carbon tetrachloride were not detected. In MW-1I TCE, PCE, and cis-1,2-DCE exceeded their

screening criteria at 310 µg/L, 16 µg/L, and 22 µg/L, respectively. 1,1-DCE and carbon tetrachloride were below their criteria at 4.7 µg/L and 0.22J µg/L, respectively.

The MW-2 well cluster is west of the Roosevelt Field mall; the shallow well is screened from 236 to 246 feet bgs and the intermediate well is screened from 306 to 316 feet bgs. In MW-2S TCE, PCE, and cis-1,2-DCE were the only site-related VOCs detected (5.3 µg/L, 1.1 µg/L, and 0.12J µg/L, respectively). TCE marginally exceeded its criterion. In MW-2I TCE was the only site-related VOC detected, at 0.33J µg/L, well below its criterion.

The MW-3 well cluster is at the southwestern end of the Roosevelt Field mall; the shallow well is screened from 234 to 244 feet bgs and the intermediate well is screened from 304 to 314 feet bgs. In MW-3S TCE and PCE exceeded their screening criteria at 6.2 µg/L and 310 µg/L, respectively. 1,1-DCE and cis-1,2-DCE were also detected at 0.79 µg/L and 1.6 µg/L, respectively. Carbon tetrachloride was not detected. In MW-3I TCE, PCE, 1,1-DCE, and cis-1,2-DCE all exceeded their screening criteria at 58 µg/L, 180 µg/L, 7.5 µg/L, and 12 µg/L, respectively. Carbon tetrachloride was not detected.

3.5 Summary of Groundwater Contamination

The results from the baseline RA/Round 5 groundwater sampling event were used to prepare a cross section of PCE and TCE in groundwater. Figure 3-3 illustrates the PCE and TCE plumes in a north-south trending cross section through the plume cores. PCE and TCE isocontours were estimated for 5, 100, and 200 µg/L (the MCL for PCE and TCE is 5 µg/L). For the purposes of this discussion, concentrations above 100 µg/L are considered the “plume core”. PCE isocontours are shown in dark pink and TCE isocontours are shown in green. Contours are dashed to indicate estimated locations of contamination.

TCE

The core of the TCE plume appears in two separate areas: a smaller area in the vicinity of SVP-9 to the north and a larger, more downgradient area in the vicinity of SVP-10 (near the location of the extraction wells) and SVP-11 at Stewart school. In the northern area at SVP-9, the plume core is in two areas in shallower ports (ports 6 and 8) separated by a lower TCE detection (83 µg/L in port 7). The highest TCE, however, was found in the downgradient area. The two supply wells are located between SVP-10 and SVP-11. The plume core is separated into two lobes, above and below the screen intervals in the two supply wells, as shown in Figure 3-3. The highest TCE concentration (630 µg/L) is in SVP-10 in port 2 at 402 feet bgs. This interval is just upgradient and at a similar elevation as the screen intervals in the supply wells. At SVP-11 at Stewart school, the upper TCE plume core lobe is defined by contamination in port 5 (110 µg/L). The lower plume core lobe is defined by the bottom two ports (402 feet bgs to more than 482 feet bgs) with TCE concentrations between 110 µg/L and 230 µg/L.

The area inside the 5 µg/L TCE contour line is more extensive than the area for PCE. The upper boundary of this contour ranges from approximately 90 to 100 feet bgs in the area north of Stewart Avenue. The upper boundary is deeper in the area south of Stewart school, confirmed by the detection of only trace levels of TCE and PCE at the new MW-12S at 110 feet bgs and no detections of TCE at SVP-14 as deep as 250 feet and a concentration below 5 µg/L at 300 feet bgs. The bottom of the 5 µg/L contour is estimated on Figure 3-3, as levels exceeded 5 µg/L in some of the deepest ports. The TCE 5 µg/L contour extends downgradient to the area between the new SVP-14 bottom port and SVP-8, the southern-most well.

PCE

The general shape of the PCE plume core during Round 5 is similar to that during Round 4, except that it continues to migrate to the south. The shape is consistent with interception by the supply wells, as evidenced by higher concentrations and the thinning of the plume just upgradient of these two wells.

As shown on Figure 3-3, the plume core was located in the vicinity of SVP-4, SVP-10, and the supply wells. At SVP-4, the plume core was approximately 120 feet thick from approximately 230 to 350 feet bgs. PCE levels within the plume core in SVP-4 ranged from 84 µg/L to 120 µg/L. The most contaminated area of the plume core was in SVP-10 at 230 µg/L. The plume core in this well is defined by concentrations in port 3 at 352 feet bgs and is less than 100 feet thick. The plume core then dips south to supply wells 10 and 11 which are screened from 370 to 417 feet bgs. Groundwater flows toward the south. The southern extent of the PCE plume core is much less than the TCE plume core. PCE concentrations decrease to below 100 µg/L between the two supply wells and SVP-11 at the Stewart school.

The PCE 5 µg/L contour extends from SVP-4 in the office complex area to SVP-12, port 4. There appears to be another smaller area of low level (up to 19 µg/L) PCE in SVP-9 that may not be connected to the SVP-4 location. The 5 µg/L contour indicates that it is shallowest (just over 100 feet bgs) and approximately 300 feet thick at SVP-4. The 5 µg/L contour thins in the vicinity of SVP-10 and the two supply wells. Further to the south the plume thins in the vicinity of SVP-11 and SVP-13. Low levels are present in SVP-12 (around 5 µg/L).

PCE was detected below 5 µg/L in some of the ports in the new multiport well, SVP-14. Therefore, the 5 µg/L contour ends at SVP-12. PCE exceeded its screening criterion in the southern-most well, SVP-8 in all ports except the shallowest one. This contamination is not correlated to PCE contamination from the Roosevelt Field mall area which pinches out at a deeper depth south of Stewart Avenue. Nearly all Roosevelt monitoring wells have a downward groundwater gradient, indicating the shallower contamination is not from the mall area.

Plume Changes Over Time

Table 3-2 shows results for TCE and PCE for all five rounds of sampling. Some parts of the contaminant plumes show a decreasing contaminant trend while other areas show increasing concentrations. The following trends are noted, beginning at the northern end of the plumes and moving downgradient in the direction of groundwater flow.

SVP-9 – This multiport well was sampled during Rounds 3 through 5. Ports 6 through 8 (147 to 247 feet bgs depth range) show increasing concentrations of TCE between Round 3 and 4, with a decrease in Round 5; however, Round 5 results were higher than the initial Round 3 results. The highest TCE was 580 µg/L in port 8 during Round 4; TCE decreased to 330 µg/L in this port in Round 5. Ports 1 through 5 (287 to 482 feet bgs depth range) show a decreasing TCE trend, with all Round 5 concentrations below the screening criterion. PCE has generally remained at about the same level in all ports during all three rounds except for increases in PCE in ports 4, 5, and 7 during Round 4. The maximum PCE detection was 27 µg/L in port 5 during Round 4 sampling.

SVP-2 – This multiport well was sampled during all five rounds. Concentrations of TCE and PCE have remained relatively constant during all five rounds, with minor fluctuations. The highest TCE (45 µg/L) was detected in port 9 during Round 3 and in port 5 during Round 5. The highest PCE (5.8 µg/L) was detected in port 5 during Round 1; all other PCE concentrations were below the screening criterion. Contaminant levels appear to be stable in this monitoring well.

SVP-4 – This multiport well was sampled during all five rounds and it contained the highest detections of TCE (280 µg/L in port 4 at 308 feet bgs) and PCE (350 µg/L in port 6 at 248 feet bgs) during Round 1 and Round 2. TCE and PCE concentrations were significantly lower in all ports during Rounds 3 through 5, with the exception of PCE in port 3, which increased from 21 µg/L during Round 1 to 210 µg/L in Round 2. PCE in this port in Round 5 was 100 µg/L.

SVP-3 – This multiport well was sampled during all five rounds. Concentrations of TCE and PCE have remained stable, at levels generally below the screening criteria, with the exception of TCE in ports 1 through 3. TCE has increased in these ports, but the maximum concentration during Round 4 was 30 µg/L.

SVP-10 – This multiport well was sampled during Rounds 3 through 5; it is located near the extraction wells for the RA. TCE concentrations have generally declined between Round 3 and 5, with higher detections in ports 2, 3, 4, and 7 during Round 4. The highest TCE (960 µg/L) was in port 2 during Round 4; the concentration dropped to 630 µg/L in Round 5. PCE concentrations were stable in ports 5 through 10 during the three sampling events. In the lower ports, PCE increased the most in port 3 (92 µg/L during Round 3, 300 µg/L during Round 4, and 230 µg/L during Round 5). Increases in ports 2 and 4 were much smaller between sampling events.

GWX-10019 – This single-screen well was sampled during all five rounds. It is next to SVP-10 and the screen interval is between SVP-10 ports 6 and 7 in depth. TCE concentrations have fluctuated considerable during sampling rounds, ranging from a high of 260 µg/L during Round 1 to a low of 3.1 µg/L during Round 4. The Round 5 result was 98 µg/L. PCE has remained very low in this well, with a maximum concentration of 5.3 µg/L during Round 5.

SVP-5 – This multiport well was sampled during all five rounds. Concentrations of TCE and PCE have remained relatively stable and are generally below the screening criteria. The highest TCE was 56 µg/L in port 2 during Round 3; TCE was detected at 41 µg/L in this port during Round 5.

GWX-10020 – This single-screen well was sampled during all five rounds. TCE and PCE concentrations have remained stable and below the screening criteria.

SVP-11 – This multiport well was sampled during Rounds 3 through 5. TCE has shown fluctuations between sampling rounds, with some ports increasing and some decreasing. The highest TCE concentrations were generally detected during Round 4 with the exception of port 2, which showed an increasing in TCE from 68 µg/L during Round 3 to 110 µg/L during Round 5. Ports 1, 2, and 5 had higher levels of TCE during Round 5 than the initial sampling round in this well (Round 3). The highest TCE (430 µg/L) was detected during Round 4 in port 1. TCE in this port had decreased to 230 µg/L in Round 5. The upper ports generally have much lower levels of TCE. PCE concentrations have remained low and stable in all ports except port 2, which showed an increase from 28 µg/L in Round 3 to 42 µg/L in Round 3.

GWX-8068 – This single-screen well was sampled during Rounds 2, 4, and 5. TCE increased from 54 µg/L during Round 2 to 120 µg/L during Round 5. PCE has increased from 170 µg/L during Round 2 to 350 µg/L in Round 5.

SVP-12 and MW-12S – This multiport well was sampled during Rounds 4 and 5. MW-12S was sampled during Round 5. TCE and PCE remained stable in all ports, with PCE generally below the screening criterion. The highest TCE was detected in port 4 at 95 µg/L during Round 4; TCE declined to 70 µg/L in Round 5. TCE showed an increase in port 2, from 43 µg/L in Round 4 to 61 µg/L in Round 5. The shallow screen in MW-12S had only trace levels of TCE and PCE, confirming that shallow contamination is not migrating downgradient from the mall area.

SVP-13 – This multiport well was sampled during Rounds 4 and 5. TCE and PCE have shown generally decreasing trends in all six ports. The maximum TCE (100 µg/L) was detected during Round 4 in port 3; the level decreased to 63 µg/L in Round 5. The maximum PCE (60 µg/L) was in port 3 during Round 4; the level decreased to 17 µg/L in Round 5.

SVP-7 – This multiport well was sampled during all five sampling events. Ports 3 through 6 showed low and stable levels of TCE and PCE during all sampling rounds. Ports 1 and 2 at the bottom of the well showed increasing levels of TCE and PCE. In port 1 TCE increased from 0.18 µg/L in Round 1 to 38 µg/L in Round 5. In

port 2 TCE increased from 0.66 µg/L in Round 1 to 43 µg/L in Round 5. In port 1 PCE was not detected during Rounds 1 and 2 and increased to 31 µg/L in Round 5. In port 2 PCE increased from 0.11J µg/L in Round 1 to 45 µg/L in Round 5.

SVP-14 – This multiport well was sampled during Round 5. It filled a data gap between SVP-12 and SVP-8. TCE exceeded the screening criterion in ports 1, 2, and 4, with a maximum detection of 60 µg/L in port 1. PCE concentrations were all below the 5 µg/L screening criterion.

SVP-8 and MW-8D – This multiport well was sampled during all sampling rounds and MW-8D was sampled during Round 5. TCE concentrations remained low and stable during all five sampling events, in all ports. No concentrations exceeded the screening criterion. PCE concentrations were also stable, although at higher levels than TCE. The most significant change was observed in port 2 with PCE increasing from 1.9 µg/L in Round 1 to 27 µg/L in Round 4. The concentration declined to 20 µg/L in Round 5. During Round 5 all ports except port 6 exceeded the screening criterion. The maximum PCE (57 µg/L) was detected during Round 2 in port 5. In the deep screen interval (515-535 feet bgs) at MW-8D TCE was detected at 0.97 µg/L and PCE was not detected. The low level of TCE in the new deep well confirms that the Roosevelt site is not the source of contamination for TCE observed in the Hempstead wellfield in 2007. SVP-8 and MW-8D will continue to be sentinel wells for this wellfield.

As additional monitoring wells have been installed at the site during the RI/FS, pre-remedial design investigations, and the RA, understanding of site contamination has evolved. The observed levels of TCE have increased while the observed levels of PCE have remained relatively constant. The highest concentrations of TCE and PCE observed during each sampling round are summarized below.

Round 1 (April 2006)

- The highest TCE was in SVP-4 in port 4 (308 feet bgs) at 280 µg/L. The highest PCE was in the same multiport well, in port 6 (248 feet bgs) at 350 µg/L. This well is located near a reported distilling well/drain field that was utilized to dispose of contaminated cooling water in the 1970s and 1980s. Contaminant levels of both TCE and PCE have declined in SVP-4 over the years.

Round 2 (July 2006)

- The highest TCE was in supply well No. 10 (screened from 377-417 feet bgs) at 220 µg/L. The highest TCE in monitoring wells was 200 µg/L in the same well and port as Round 1. The highest PCE was also in supply well No. 10 at 230 µg/L. The highest PCE in monitoring wells was 210 µg/L in SVP-4 port 3 (353 feet bgs).

Round 3 (October 2008)

- The highest TCE was in the new SVP-10 port 2 (402 feet bgs) at 540 µg/L. SVP-10 is located south of SVP-4 and is near the RA extraction wells. The highest PCE was in SVP-4 port 5 (288 feet bgs) at 200 µg/L. The highest TCE detection was further downgradient than in the previous two sampling rounds, but still located in the mall area.

Round 4 (July 2009)

- The highest TCE concentration remained SVP-10 port 2 at 960 µg/L. The highest PCE was detected at GWX-8068 (screen interval 265-291 feet bgs) at 420 µg/L. GWX-8068 is not directly downgradient of SVP-4 and SVP-10; it is further to the east near the southern end of Ring Road. PCE in GWX-8068 may be more related to the PCE detected in the MW-3 well cluster sampled for the first time during Round 5. The second highest PCE was in SVP-10 in port 3 (300 µg/L at 352 feet bgs); it appears that PCE has migrated downgradient from SVP-4, where PCE levels declined during Round 4.

Round 5 (September 2011)

- The highest TCE concentration was again detected at SVP-10 port 2 at 630 µg/L. The highest PCE remained at GWX-8068 at 350 µg/L. In SVP-10 port 3 PCE was detected at 230 µg/L during Round 5.

In the area south of the two Garden City supply wells, the TCE concentrations have fluctuated in SVP-11 at Stewart school. Round 4 results were generally higher than during Round 3. Round 5 showed a decrease from Round 4 although some ports remained higher than their first sample results during Round 3. During Round 5 the highest TCE (230 µg/L) was in port 1 (482 feet bgs), an increase from 150 µg/L during Round 3. Conversely, Port 3 (352 feet bgs) showed a decrease during Round 5 (51 µg/L) compared with Round 3 (210 µg/L). Pumping at the two supply wells may be drawing some contamination back to the north.

Other contamination south of the supply wells appears to be decreasing, with decreases in TCE and/or PCE generally observed in SVP-12 (south of Stewart school) and SVP-13 (southeast of the school). New multiport well SVP-14 between SVP-12 and SVP-8/MW-8D (the southern-most wells) has filled the data gap for TCE and PCE concentrations in this area. While TCE exceeded the screening criterion in three of the four deepest ports at SVP-14, the levels are relatively low (60 µg/L) and the low and stable TCE detections in SVP-8 allow a more complete mapping of the plume (see Figure 3-3).

PCE and TCE contamination observed in the new MW-3 monitoring well cluster is not within the groundwater plume that originates in the western mall/office complex area. It is likely from a different source that may be underneath the mall buildings and will be investigated separately.

Section 4 References

CDM Federal Programs Corporation (CDM Smith). 2008a. Remedial Design Final Quality Assurance Project Plan (QAPP), Old Roosevelt Field Contaminated Groundwater Site, Garden City, New York. March 14, 2008

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Tables

Table 2-1
Single-Screen Monitoring Well Round 5 Water Level Measurements
Old Roosevelt Field Groundwater Contamination Site
Garden City, New York

Well ID	Date	Screen Interval (feet bgs)	Elevation (inner casing)	DTW	Water Level Elevation
MW-1S	9/8/2011	235-245	86.11	26.53	59.58
MW-1I	9/8/2011	305-315	86.36	27.30	59.06
MW-2S	9/8/2011	236-246	87.15	26.96	60.19
MW-2I	9/8/2011	306-316	86.59	27.46	59.13
MW-3S	9/8/2011	234-244	79.13	20.77	58.36
MW-3I	9/8/2011	304-314	79.09	20.98	58.11
MW-8D	9/8/2011	515-535	62.28	21.11	41.17
MW-12S	9/8/2011	90-110	75.74	19.08	56.66
N-8068	NA	265-291	NA (1)	NA (2)	NA (2)
N-10019	9/8/2011	223-228	85.19	26.77	58.42
N-10020	9/8/2011	185-190	81.85	22.73	59.12

(1) well elevation not measured do to well location inside a building

(2) Water level not measured because well contains a pump

bgs - below ground surface

DTW - depth to water (from inner casing)

Table 2-2
Groundwater Elevation Data: Baseline RA/Round 5 Multiport Well Pressure Readings
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Well ID	Port	Ground Surface Elevation (feet above msl)	Measurement Port Depth (feet bgs)	Port Elevation (feet msl)	Round 5 Measurements				
					Atm. Pressure (psi)	Fluid Pressure-Outside Casing (psi)	Pressure Head (feet)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)
SVP-1	1	86.58	450	-363.42	14.70	198.25	423.90	26.55	60.03
	2	86.58	403	-316.42	14.70	178.39	378.04	25.37	61.21
	3	86.58	373	-286.42	14.70	165.69	348.71	24.67	61.91
	4	86.58	318	-231.42	14.70	142.25	294.57	23.74	62.84
	5	86.58	293	-206.42	14.70	131.53	269.82	23.47	63.11
	6	86.58	253	-166.42	14.70	114.5	230.48	22.76	63.82
	7	86.58	203	-116.42	14.70	93.05	180.95	22.25	64.33
	8	86.58	153	-66.42	14.70	71.75	131.76	21.39	65.19
	9	86.58	103	-16.42	14.70	50.42	82.49	20.59	65.99
	10	86.58	53	33.58	14.70	28.96	32.93	20.10	66.48
SVP-2	1	88.39	450	-361.61	14.70	196.86	420.69	29.76	58.63
	2	88.39	413	-324.61	14.70	180.9	383.83	29.58	58.81
	3	88.39	373	-284.61	14.70	163.66	344.02	29.35	59.04
	4	88.39	333	-244.61	14.70	146.39	304.13	29.19	59.2
	5	88.39	293	-204.61	14.70	129.11	264.23	29.06	59.33
	6	88.39	253	-164.61	14.70	111.84	224.34	28.90	59.49
	7	88.39	193	-104.61	14.70	85.95	164.55	28.63	59.76
	8	88.39	153	-64.61	14.70	68.71	124.73	28.40	59.99
	9	88.39	103	-14.61	14.70	47.13	74.90	28.18	60.21
	10	88.39	53	35.39	14.70	25.43	24.78	28.25	60.14
SVP-3	1	87.17	450	-362.83	14.70	198.24	423.88	26.57	60.6
	2	87.17	393	-305.83	14.70	173.63	367.04	26.35	60.82
	3	87.17	373	-285.83	14.70	164.98	347.07	26.30	60.87
	4	87.17	293	-205.83	14.70	130.55	267.55	25.73	61.44
	5	87.17	173	-85.83	14.70	78.82	148.08	25.08	62.09
	6	87.17	103	-15.83	14.70	48.56	78.20	24.88	62.29
	7	87.17	53	34.17	14.70	26.88	28.13	24.90	62.27
SVP-4	1	88.85	420	-331.15	14.70	184.44	392.01	28.41	60.44
	2	88.85	400	-311.15	14.70	175.80	372.06	28.34	60.51
	3	88.85	353	-264.15	14.70	155.56	325.31	28.04	60.81
	4	88.85	308	-219.15	14.70	136.12	280.42	27.88	60.97
	5	88.85	288	-199.15	14.70	127.52	260.55	27.72	61.13
	6	88.85	248	-159.15	14.70	110.27	220.72	27.52	61.33
	7	88.85	188	-99.15	14.70	84.43	161.04	27.13	61.72
	8	88.85	148	-59.15	14.70	67.18	121.20	26.93	61.92
	9	88.85	103	-14.15	14.70	47.71	76.24	26.85	62
	10	88.85	48	40.85	14.70	23.89	21.22	26.80	62.05
SVP-5	1	85.55	430	-344.45	14.70	189.65	404.04	26.39	59.16
	2	85.55	408	-322.45	14.70	178.99	379.42	28.98	56.57
	3	85.55	358	-272.45	14.70	158.35	331.76	26.60	58.95
	4	85.55	313	-227.45	14.70	138.98	287.02	26.29	59.26
	5	85.55	293	-207.45	14.70	130.45	267.32	25.96	59.59
	6	85.55	253	-167.45	14.70	113.30	227.71	25.53	60.02
	7	85.55	193	-107.45	14.70	87.89	169.03	24.15	61.4
	8	85.55	153	-67.45	14.70	70.82	129.61	23.53	62.02
	9	85.55	98	-12.45	14.70	47.21	75.08	23.00	62.55
	10	85.55	48	37.55	14.70	25.54	25.03	22.99	62.56
SVP-6	1	60.88	447	-386.12	14.72	201.70	431.82	15.64	45.24
	2	60.88	370	-309.12	14.72	168.68	355.57	14.81	46.07
	3	60.88	250	-189.12	14.72	117.09	236.42	13.83	47.05
	4	60.88	180	-119.12	14.72	86.97	166.86	13.32	47.56
	5	60.88	105	-44.12	14.72	56.47	96.42	8.68	52.2
	6	60.88	50	10.88	14.72	32.74	41.62	8.43	52.45
SVP-7	1	82.58	445	-362.42	14.70	194.91	416.19	29.26	53.32
	2	82.58	428	-345.42	14.70	187.58	399.26	29.17	53.41
	3	82.58	315	-232.42	14.70	138.25	285.33	29.97	52.61
	4	82.58	208	-125.42	14.70	93.42	181.80	26.39	56.19
	5	82.58	103	-20.42	14.70	48.21	77.39	25.69	56.89
	6	82.58	48	34.58	14.70	24.38	22.36	25.67	56.91

Table 2-2
Groundwater Elevation Data: Baseline RA/Round 5 Multiport Well Pressure Readings
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Well ID	Port	Ground Surface Elevation (feet above msl)	Measurement Port Depth (feet bgs)	Port Elevation (feet msl)	Round 5 Measurements				
					Atm. Pressure (psi)	Fluid Pressure-Outside Casing (psi)	Pressure Head (feet)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)
SVP-8	1	62.26	435	-372.74	14.73	195.74	418.04	17.41	44.85
	2	62.26	373	-310.74	14.73	169.51	357.46	15.92	46.34
	3	62.26	238	-175.74	14.73	112.42	225.61	12.63	49.63
	4	62.26	158	-95.74	14.73	79.04	148.52	9.64	52.62
	5	62.26	103	-40.74	14.73	55.40	93.93	9.17	53.09
	6	62.26	48	14.26	14.73	31.61	38.98	9.06	53.2
SVP-9	1	90.27	482	-391.73	14.72	210.81	452.86	29.62	60.65
	2	90.27	402	-311.73	14.72	176.2	372.93	29.47	60.8
	3	90.27	352	-261.73	14.72	154.64	323.14	29.20	61.07
	4	90.27	307	-216.73	14.72	135.18	278.20	29.10	61.17
	5	90.27	287	-196.73	14.72	126.54	258.24	29.03	61.24
	6	90.27	247	-156.73	14.72	109.27	218.36	28.87	61.4
	7	90.27	187	-96.73	14.72	83.4	158.61	28.56	61.71
	8	90.27	147	-56.73	14.72	66.18	118.85	28.28	61.99
	9	90.27	102	-11.73	14.72	46.76	74.00	28.08	62.19
	10	90.27	47	43.27	14.72	22.92	18.94	28.08	62.19
SVP-10	1	87.83	482	-394.17	14.73	210.48	452.08	30.40	57.43
	2	87.83	402	-314.17	14.73	175.68	371.71	30.69	57.14
	3	87.83	352	-264.17	14.73	154.21	322.12	30.22	57.61
	4	87.83	307	-219.17	14.73	134.77	277.23	30.07	57.76
	5	87.83	287	-199.17	14.73	126.16	257.34	29.93	57.9
	6	87.83	247	-159.17	14.73	109.30	218.41	28.83	59
	7	87.83	187	-99.17	14.73	83.62	159.10	28.07	59.76
	8	87.83	147	-59.17	14.73	66.75	120.14	26.99	60.84
	9	87.83	102	-14.17	14.73	47.36	75.36	26.72	61.11
	10	87.83	47	40.83	14.73	23.51	20.28	26.74	61.09
SVP-11	1	80.32	482	-401.68	14.71	213.03	458.01	24.48	55.84
	2	80.32	402	-321.68	14.71	178.85	379.08	23.33	56.99
	3	80.32	352	-271.68	14.71	157.10	328.85	23.51	56.81
	4	80.32	307	-226.68	14.71	137.75	284.16	23.15	57.17
	5	80.32	287	-206.68	14.71	129.12	264.23	23.06	57.26
	6	80.32	247	-166.68	14.71	111.85	224.34	22.90	57.42
	7	80.32	187	-106.68	14.71	86.04	164.73	22.44	57.88
	8	80.32	147	-66.68	14.71	69.64	126.86	20.28	60.04
	9	80.32	102	-21.68	14.71	50.16	81.87	20.22	60.1
	10	80.32	47	33.32	14.71	26.96	28.29	18.74	61.58
SVP-12	1	76.2	515	-438.8	14.70	227.60	491.69	23.84	52.36
	2	76.2	485	-408.8	14.70	214.82	462.17	23.32	52.88
	3	76.2	405	-328.8	14.70	180.59	383.12	22.29	53.91
	4	76.2	355	-278.8	14.70	159.37	334.11	21.25	54.95
	5	76.2	295	-218.8	14.70	133.76	274.97	20.33	55.87
	6	76.2	245	-168.8	14.70	112.18	225.13	20.11	56.09
SVP-13	1	74.06	515	-440.94	14.71	231.82	501.41	14.13	59.93
	2	74.06	485	-410.94	14.71	216.67	466.42	19.08	54.98
	3	74.06	405	-330.94	14.71	182.20	386.81	18.60	55.46
	4	74.06	355	-280.94	14.71	160.62	336.97	18.39	55.67
	5	74.06	295	-220.94	14.71	134.76	277.25	18.04	56.02
	6	74.06	245	-170.94	14.71	113.25	227.58	17.67	56.39
SVP-14	1	69.07	530	-460.93	14.69	234.99	508.78	21.77	47.3
	2	69.07	490	-420.93	14.69	217.68	468.80	21.7	47.37
	3	69.07	410	-340.93	14.69	183.45	389.75	20.67	48.4
	4	69.07	360	-290.93	14.69	162.49	341.34	19.03	50.04
	5	69.07	300	-230.93	14.69	136.77	281.94	18.36	50.71
	6	69.07	250	-180.93	14.69	115.25	232.24	18.01	51.06
	7	69.07	185	-115.93	14.69	87.28	167.64	17.53	51.54
	8	69.07	145	-75.93	14.69	70.23	128.27	16.87	52.2
	9	69.07	100.0	-30.93	14.69	51.66	85.38	14.71	54.36
	10	69.07	85.0	-15.93	14.69	45.17	70.39	14.68	54.39

Table 2-2
Groundwater Elevation Data: Baseline RA/Round 5 Multiport Well Pressure Readings
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Well ID	Port	Ground Surface Elevation (feet above msl)	Measurement Port Depth (feet bgs)	Port Elevation (feet msl)	Round 5 Measurements				
					Atm. Pressure (psi)	Fluid Pressure-Outside Casing (psi)	Pressure Head (feet)	Depth to Water (feet bgs)	Water Level Elevation (feet msl)

Notes:

bgs = below ground surface

msl = mean sea level

Atm. = Atmospheric

psi = pounds per square inch

Table 2-3

Summary of Baseline RA/Round 5 Multiport Well, Monitoring Well, and Supply Well Samples
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Well ID	Sample ID	CLP ID	Analysis	QA/QC	Collection/ Shipment Date
SVP-1	SVP-1-1/RAB	B9M46	Trace VOC		9/15/2011
	SVP-1-2/RAB	B9M47	Trace VOC		9/15/2011
	SVP-1-3/RAB	B9M48	Trace VOC		9/15/2011
	SVP-1-4/RAB	B9M49	Trace VOC		9/15/2011
	SVP-1-5/RAB	B9M50	Trace VOC		9/15/2011
	SVP-1-6/RAB	B9M51	Trace VOC		9/15/2011
	SVP-1-7/RAB	B9M52	Trace VOC		9/15/2011
	SVP-1-8/RAB	B9M53	Trace VOC		9/15/2011
	SVP-1-9/RAB	B9M54	Trace VOC		9/15/2011
	SVP-1-10/RAB	B9M55	Trace VOC		9/15/2011
SVP-2	SVP-2-1/RAB	B9LX5	Trace VOC		9/13/2011
	SVP-2-2/RAB	B9LX6	Trace VOC		9/13/2011
	SVP-2-3/RAB	B9LX7	Trace VOC		9/13/2011
	SVP-2-4/RAB	B9LX8	Trace VOC		9/13/2011
	SVP-2-5/RAB	B9LX9	Trace VOC		9/13/2011
	SVP-2-6/RAB	B9LY0	Trace VOC		9/13/2011
	SVP-2-7/RAB	B9LY1	Trace VOC		9/13/2011
	SVP-2-8/RAB	B9LY2	Trace VOC		9/13/2011
	SVP-2-9/RAB	B9LY3	Trace VOC		9/13/2011
	SVP-2-10/RAB	B9LY4	Trace VOC		9/13/2011
SVP-3	SVP-3-1/RAB	B9LY5	Trace VOC		9/14/2011
	SVP-3-2/RAB	B9M00	Trace VOC		9/14/2011
	SVP-3-3/RAB	B9LY6	Trace VOC		9/14/2011
	SVP-3-4/RAB	B9M01	Trace VOC		9/14/2011
	SVP-3-5/RAB	B9LY7	Trace VOC		9/14/2011
	SVP-3-6/RAB	B9LY8	Trace VOC		9/14/2011
	SVP-3-7/RAB	B9LY9	Trace VOC		9/14/2011
SVP-4	SVP-4-1/RAB	B9LZ0	Trace VOC		9/13/2011
	SVP-4-2/RAB	B9LZ1	Trace VOC		9/13/2011
	SVP-4-3/RAB	B9LZ2	Trace VOC		9/13/2011
	SVP-4-4/RAB	B9LZ3	Trace VOC		9/13/2011
	SVP-4-5/RAB	B9LZ4	Trace VOC		9/13/2011
	SVP-4-6/RAB	B9LZ5	Trace VOC		9/13/2011
	SVP-4-7/RAB	B9LZ6	Trace VOC		9/13/2011
	SVP-4-8/RAB	B9LZ7	Trace VOC		9/13/2011
	SVP-4-9/RAB	B9LZ8	Trace VOC		9/13/2011
	SVP-4-10/RAB	B9LZ9	Trace VOC		9/13/2011
SVP-5	SVP-5-1/RAB	B9M02	Trace VOC		9/14/2011
	SVP-105-1/RAB	B9MA0	Trace VOC	Duplicate of SVP-5-1/RAB	9/14/2011
	SVP-5-2/RAB	B9M03	Trace VOC		9/14/2011
	SVP-5-3/RAB	B9M04	Trace VOCs		9/14/2011
	SVP-5-4/RAB	B9M05	Trace VOC		9/14/2011
	SVP-5-5/RAB	B9M06	Trace VOCs		9/14/2011
	SVP-5-6/RAB	B9M07	Trace VOC		9/14/2011
	SVP-5-7/RAB	B9M08	Trace VOC		9/14/2011
	SVP-5-8/RAB	B9M09	Trace VOCs		9/14/2011

Table 2-3

Summary of Baseline RA/Round 5 Multiport Well, Monitoring Well, and Supply Well Samples
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Well ID	Sample ID	CLP ID	Analysis	QA/QC	Collection/ Shipment Date
	SVP-5-9/RAB	B9M10	Trace VOC		9/14/2011
	SVP-5-10/RAB	B9M11	Trace VOC		9/14/2011
SVP-6	SVP-6-1/RAB	B9M56	Trace VOC		9/14/2011
	SVP-6-2/RAB	B9M57	Trace VOC		9/14/2011
	SVP-6-3/RAB	B9M58	Trace VOC		9/14/2011
	SVP-6-4/RAB	B9M59	Trace VOC		9/14/2011
	SVP-6-5/RAB	B9M60	Trace VOC		9/14/2011
	SVP-6-6/RAB	B9M61	Trace VOC		9/14/2011
SVP-7	SVP-7-1/RAB	B9M62	Trace VOC		9/14/2011
	SVP-7-2/RAB	B9M63	Trace VOC		9/14/2011
	SVP-7-3/RAB	B9M64	Trace VOC		9/14/2011
	SVP-7-4/RAB	B9M65	Trace VOC		9/14/2011
	SVP-7-5/RAB	B9M66	Trace VOC		9/14/2011
	SVP-7-6/RAB	B9M67	Trace VOC		9/14/2011
SVP-8	SVP-8-1/RAB	B9M68	Trace VOC		9/15/2011
	SVP-8-2/RAB	B9M69	Trace VOC		9/15/2011
	SVP-8-3/RAB	B9M70	Trace VOC		9/15/2011
	SVP-8-4/RAB	B9M71	Trace VOC		9/15/2011
	SVP-8-5/RAB	B9M72	Trace VOC		9/15/2011
	SVP-8-6/RAB	B9M73	Trace VOC		9/15/2011
SVP-9	SVP-9-1/RAB	B9M12	Trace VOC		9/13/2011
	SVP-9-2/RAB	B9M13	Trace VOC		9/13/2011
	SVP-9-3/RAB	B9M14	Trace VOC		9/13/2011
	SVP-9-4/RAB	B9M15	Trace VOC		9/13/2011
	SVP-9-5/RAB	B9M16	Trace VOC		9/13/2011
	SVP-9-6/RAB	B9M17	Trace VOC		9/13/2011
	SVP-9-7/RAB	B9M18	Trace VOC		9/13/2011
	SVP-9-8/RAB	B9N01	Trace VOC	Duplicate of SVP-9-7/RAB	9/13/2011
	SVP-9-9/RAB	B9M19	Trace VOC		9/13/2011
	SVP-9-10/RAB	B9M20	Trace VOC		9/13/2011
	SVP-9-11/RAB	B9M21	Trace VOC		9/13/2011
SVP-10	SVP-10-1/RAB	B9M22	Trace VOC		9/13/2011
	SVP-10-2/RAB	B9M23	Trace VOC		9/13/2011
	SVP-10-3/RAB	B9M24	Trace VOC		9/13/2011
	SVP-10-4/RAB	B9M25	Trace VOC		9/13/2011
	SVP-10-5/RAB	B9M26	Trace VOC		9/13/2011
	SVP-10-6/RAB	B9M27	Trace VOC		9/13/2011
	SVP-10-7/RAB	B9N02	Trace VOC		9/13/2011
	SVP-10-8/RAB	B9M28	Trace VOC		9/13/2011
	SVP-10-9/RAB	B9M29	Trace VOC		9/13/2011
	SVP-10-10/RAB	B9M30	Trace VOC		9/13/2011
SVP-11	SVP-11-1/RAB	B9M32	Trace VOC		9/15/2011
	SVP-11-2/RAB	B9M33	Trace VOCs, Filtered and Unfiltered TAL Metals		9/15/2011
	SVP-11-3/RAB	B9M35	Trace VOC		9/15/2011

Table 2-3

Summary of Baseline RA/Round 5 Multiport Well, Monitoring Well, and Supply Well Samples
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Well ID	Sample ID	CLP ID	Analysis	QA/QC	Collection/ Shipment Date
SVP-11	SVP-11-4/RAB	B9M36	Trace VOCs, Filtered and Unfiltered TAL metals		9/15/2011
	SVP-11-5/RAB	B9M38	Trace VOC		9/15/2011
	SVP-11-6/RAB	B9M39	Trace VOC		9/15/2011
	SVP-11-7/RAB	B9M40	Trace VOCs, Filtered and Unfiltered TAL metals		9/15/2011
	SVP-11-8/RAB	B9M42	Trace VOC		9/15/2011
	SVP-11-9/RAB	B9M43	Trace VOC		9/15/2011
	SVP-11-10/RAB	B9MA2	Trace VOC	Duplicate of SVP-11-9/RAB	9/15/2011
	SVP-11-10/RAB	B9M44	Trace VOC, Filtered and Unfiltered TAL metals		9/15/2011
SVP-12	SVP-12-1/RAB	B9M74	Trace VOC		9/15/2011
	SVP-12-2/RAB	B9M75	Trace VOC		9/15/2011
	SVP-12-3/RAB	B9M76	Trace VOC		9/15/2011
	SVP-12-4/RAB	B9M77	Trace VOC		9/15/2011
	SVP-12-5/RAB	B9M78	Trace VOC		9/15/2011
	SVP-12-6/RAB	B9M79	Trace VOC		9/15/2011
SVP-13	SVP-13-1/RAB	B9M80	Trace VOC		9/15/2011
	SVP-13-2/RAB	B9M81	Trace VOC		9/15/2011
	SVP-13-3/RAB	B9M82	Trace VOC		9/15/2011
	SVP-13-4/RAB	B9M83	Trace VOC		9/15/2011
	SVP-13-5/RAB	B9M84	Trace VOC		9/15/2011
	SVP-13-5/RAB	B9MC2	Trace VOC	Duplicate of SVP-13-5/RAB	9/15/2011
	SVP-13-6/RAB	B9M85	Trace VOC		9/15/2011
SVP-14	SVP-14-1/RAB	B9M86	Trace VOC, TAL total metals		9/19/2011
	SVP-14-2/RAB	B9MA4	Trace VOC, TAL total and filtered metals, ammonia, hardness, TDS, TKN		9/19/2011
	SVP-14-3/RAB	B9MA6	Trace VOC, TAL total metals		9/19/2011
	SVP-14-4/RAB	B9MA7	Trace VOC, TAL total and filtered metals, ammonia, hardness, TDS, TKN		9/19/2011
	SVP-14-5/RAB	B9MA9	Trace VOC, TAL total metals		9/19/2011
	SVP-14-6/RAB	B9MB0	Trace VOC, TAL total metals		9/19/2011
	SVP-14-7/RAB	B9MB1	Trace VOC, TAL total and filtered metals, ammonia, hardness, TDS, TKN		9/19/2011
	SVP-14-8/RAB	B9MB3	Trace VOC, TAL total metals		9/19/2011
	SVP-14-9/RAB	B9MB4	Trace VOC, TAL total metals		9/19/2011
	SVP-14-10/RAB	B9MB5	Trace VOC, TAL total and filtered metals, ammonia, hardness, TDS, TKN	MS/MSD (TAL only)	9/19/2011
Garden City Supply Well #10	GWP-10/RAB	B9MC1	Trace VOC	Duplicate of SVP-14-10/RAB	9/15/2011

Table 2-3

Summary of Baseline RA/Round 5 Multiport Well, Monitoring Well, and Supply Well Samples
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Well ID	Sample ID	CLP ID	Analysis	QA/QC	Collection/ Shipment Date
Garden City Supply Well #11	GWP-11/RAB	B9MC0	Trace VOC		9/15/2011
N-10019	GWX-10019/RAB	B9M98	Trace VOC		9/12/2011
N-10020	GWX-10020/RAB	B9M97	Trace VOC		9/12/2011
N-8068	8068/RAB	B9MC3	Trace VOC		9/19/2011
MW-01S	MW-01S/RAB	B9MC4	Trace VOC		9/20/2011
MW-01I	MW-01I/RAB	B9MC5	Trace VOC		9/20/2011
MW-02S	MW-02S/RAB	B9MC6	Trace VOC		9/16/2011
MW-02I	MW-02I/RAB	B9MC7	Trace VOC		9/16/2011
MW-03S	MW-03S/RAB	B9MC8	Trace VOC		9/20/2011
MW-03I	MW-03I/RAB	B9MC9	Trace VOC		9/20/2011
MW-08D	MW-08D/RAB	B9MD0	Trace VOC		9/20/2011
MW-08D	MW-108D/RAB	B9MD7	Trace VOC	Duplicate of MW-08D/RAB	9/20/2011
MW-12S	MW-12S/RAB	B9MD1	Trace VOC, TAL filtered and unfiltered metals		9/20/2011
Trip Blanks	TB091211	B9M87	Trace VOC	Trip Blank	9/12/2011
	TB091311	B9M88	Trace VOC	Trip Blank	9/13/2011
	TB091411	B9M89	Trace VOC	Trip Blank	9/14/2011
	TB091411A	B9MB7	Trace VOC	Trip Blank	9/15/2011
	TB091511	B9M90	Trace VOC	Trip Blank	9/15/2011
	TB091511A	B9MB9	Trace VOC	Trip Blank	9/15/2011
	TB091611	B9M91	Trace VOC	Trip Blank	9/16/2011
	TB091911	B9M92	Trace VOC	Trip Blank	9/19/2011
	TB092011	B9M93	Trace VOC	Trip Blank	9/20/2011
	TB080409	B59A1	Trace VOC	Trip Blank	8/4/2009
Field Blanks	FB091211	B9M99	Trace VOC	Field Blank	9/12/2011
	FB091311	B9N00	Trace VOC	Field Blank	9/13/2011
	FB091411	B9MA1	Trace VOC	Field Blank	9/14/2011
	FB091411F	MB9MA3	TAL Filtered Metals	Field Blank	9/14/2011
	FB091511	B9MB8	Trace VOC	Field Blank	9/15/2011
	FB091611	B9MD3	Trace VOC	Field Blank	9/16/2011
	FB091911	B9MD4	Trace VOC	Field Blank	9/19/2011
	FB091911F	MB9MD4	TAL Filtered Metals	Field Blank	9/19/2011
	FB092011	B9M94	Trace VOC	Field Blank	9/20/2011
	FB092011F	MB9M95	TAL Filtered Metals	Field Blank	9/20/2011

Abbreviations:

CLP = Contract Laboratory Program

ID = identification

MS/MSD = matrix spike/matrix spike duplicate

QA/QC = quality assessment/quality control

TDS = total dissolved solids

TKN = total Kjeldahl nitrogen

TAL = Target Analyte List

VOC = volatile organic compounds

Table 3-1

Site-related VOC Results - Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Port #	SVP-1					SVP-2					SVP-3				
	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
Port 10	ND	ND	ND	ND	ND	ND	0.36J	ND	ND	ND	ND	ND	ND	ND	ND
Port 9	ND	ND	ND	ND	ND	0.36J	21	ND	0.65	ND	ND	ND	ND	ND	ND
Port 8	ND	ND	ND	ND	ND	3.1	20	ND	0.71	ND	ND	ND	ND	ND	ND
Port 7	ND	ND	ND	ND	ND	2.8	17	ND	0.9	ND	ND	0.14J	ND	ND	ND
Port 6	ND	0.14J	ND	ND	ND	4	30	ND	7.9	ND	0.45J	0.13J	ND	ND	ND
Port 5	0.52	0.41J	ND	ND	ND	4.2	45	ND	8.3	ND	0.45J	0.76	ND	ND	ND
Port 4	0.6	0.43J	ND	ND	ND	4.4	32	ND	9	ND	0.36J	0.84	ND	ND	ND
Port 3	0.77	0.99	ND	ND	ND	4.8	29	ND	5.8	ND	ND	16	ND	0.23J	ND
Port 2	0.47 J	0.81	ND	ND	ND	2.8	20	ND	3.3	ND	ND	23	1.2	0.55	ND
Port 1	ND	1.1	ND	0.26J	ND	1.3	13	ND	1.2	ND	ND	13	1.2	0.55	ND

Port #	SVP-4					SVP-5					MW-025				
	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
Port 10	0.23J	0.36J	ND	ND	ND	ND	ND	ND	ND	ND	1.1	5.3	ND	0.12J	ND
Port 9	1.1	1.6	ND	0.25J	ND	ND	0.14J	ND	ND	ND	ND	ND	ND	ND	ND
Port 8	10	18	ND	0.76	ND	ND	0.64	ND	ND	ND	ND	ND	ND	ND	ND
Port 7	13	49	ND	1.5	ND	0.22J	0.62	ND	ND	ND	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
Port 6	120	55	ND	4.3	ND	0.41J	5.7	0.38J	0.76	ND	ND	0.33J	ND	ND	ND
Port 5	120	47	ND	4.4	ND	0.46J	8.5	ND	0.65	ND	ND	ND	ND	ND	ND
Port 4	84	41	ND	3.4	ND	0.48J	8	ND	0.55	ND	ND	ND	ND	ND	ND
Port 3	100	41	ND	2.9	ND	0.59	4.5	ND	0.39J	ND	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
Port 2	16	8.9	ND	0.63	0.38J	0.99	41	ND	1.9	1	310	6.2	0.79	1.6	ND
Port 1	20	12	1.5	0.7	0.33J	0.21J	6.1	ND	0.4J	0.25J	ND	ND	ND	ND	ND

Port #	SVP-6					SVP-7					SVP-8				
	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
Port 6	ND	0.4J	2	0.16J	ND	ND	ND	ND	ND	ND	2	0.24J	ND	ND	ND
Port 5	ND	0.64	ND	2.2	ND	ND	0.24J	ND	ND	ND	29	0.99	ND	0.16J	ND
Port 4	ND	0.35J	0.69	2.6	ND	0.44J	0.42J	ND	ND	ND	21	1.5	ND	0.22J	ND
Port 3	ND	2.3	ND	4.9	ND	3.9	10	ND	0.78	ND	26	1.5	ND	0.26J	ND
Port 2	ND	ND	ND	ND	ND	45	43	17J	1.5J	ND	20	4.8	ND	0.61	ND
Port 1	ND	0.67	ND	2.4	0.24J	31	38	15J	0.34J	ND	6.6	1.6	ND	0.22J	ND

Port #	SVP-9					SVP-10					SVP-11					SVP-14					
	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT	
Port 10	ND	4.6	ND	ND	ND	ND	0.58	ND	ND	ND	ND	ND	ND	ND	ND	0.25J	ND	ND	ND	ND	
Port 9	2.9	7.3	ND	0.98	ND	ND	1.2	ND	0.13J	ND	ND	0.3J	ND	ND	ND	ND	ND	ND	ND	ND	
Port 8	4.7	330	1.2	6.1	ND	1.2	49	ND	6.1	ND	0.39J	1.7	ND	0.14J	ND	ND	ND	ND	ND	ND	
Port 7	5.9	63	0.59	1.8	ND	2.4	79	ND	12	0.16J	1.1	9.1	ND	0.89	ND	0.51	ND	ND	ND	ND	
Port 6	6.5	210	1	25	ND	ND	4.1	ND	0.95	ND	4.9	38	ND	3.2	ND	1.1	ND	ND	ND	ND	
Port 5	19	3	0.37J	0.65	ND	4.1	60	ND	1.6	ND	11	110	ND	10	0.29J	4	1.6	ND	ND	ND	
Port 4	10	1.5	ND	ND	ND	12J	77D	ND	3.7J	ND	3.2	58	ND	10	ND	1.4	17	ND	1.7	ND	
Port 3	1.3	4.8	2.3	0.21J	ND	230	50	6.1J	7.6J	ND	2	51	ND	10	ND	0.38J	ND	ND	ND	ND	
Port 2	0.31J	2.7	3.7	0.22J	ND	26	630	ND	73	0.74	42	110	4.3	6.5	0.61	0.52	17	ND	2.2	0.2J	
Port 1	ND	2	ND	ND	ND	0.55	25	ND	12	ND	1.6	230	ND	66	0.46J	1.4	60	ND	9.7	0.23J	

Port #	SVP-12					SVP-13					MW-03I				
	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT	PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
Port 6	4.8	25	ND	2.1	0.17J	4.3	18	ND	0.89	ND	180	58	7.5	12	ND
Port 5	4.7	20	ND	1.8	ND	3.9	19	ND	1.3	ND	ND	ND	ND	ND	ND
Port 4	5.1	70	0.75	13	0.72	9.2	19	ND	0.76	ND	ND	ND	ND	ND	ND
Port 3	4.8	90	0.72	13	0.64	17	63	1.9	4.7	0.58	ND	ND	ND	ND	ND
Port 2	0.8	61	ND	5.2	ND	1.2	3.2	0.11J	ND	ND	ND	ND	ND	ND	ND
Port 1	ND	1	ND	ND	ND	5.6	8.9	ND	0.51	ND	ND	ND	ND	ND	ND

Single-Screen Wells				
GWX-8068				
PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
350	120	10	6	0.36J
GWX-10019				
PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
5.3J	98	ND	6.7J	ND
GWX-10020				
PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
0.3J	0.25J	ND	ND	ND
Supply Well GWP-10				
PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
54	25	3.4J	3.1J	0.45J
Supply Well GWP-11				
PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
130	96	2.5	9.8	0.21J
MW-8D				
PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
ND	0.97	ND	ND	ND
MW-12S				
PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
0.45J	0.21J	ND	ND	ND
MW-01S				
PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
2.3	340	ND	5.7	ND
MW-01I				
PCE	TCE	1,1-DCE	cis-1,2-DCE	CT
16	310	4.7	22	0.22J

Notes:
 PCE = tetrachloroethylene
 TCE = trichloroethene
 1,1-DCE = 1,1-dichloroethene
 cis-1,2-DCE = cis-1,2-dichloroethene
 CT = carbon tetrachloride
 ND = non detect
 DUP = duplicate
 J = estimated result
 All results in micrograms per liter ($\mu\text{g/L}$)
 Sampling date: September 2011

Table 3-2
TCE and PCE Detections - Rounds 1 through 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Wells Listed from North to South along Groundwater Flow Direction

Multi-port Well/Well	Location/Depth of Port (ft bgs)	TCE R1 µg/L	TCE R2 µg/L	TCE R3 µg/L	TCE R4 µg/L	TCE R5 µg/L	PCE R1 µg/L	PCE R2 µg/L	PCE R3 µg/L	PCE R4 µg/L	PCE R5 µg/L
SVP-9 - Northern End of Office Complex											
Port 10	47	NA	NA	0.61	0.55	4.6	NA	NA	ND	ND	ND
Port 9	102	NA	NA	11	7.8	7.3	NA	NA	5.5	4.1	2.9
Port 8	147	NA	NA	210	580	330	NA	NA	3.3	7.3	4.7
Port 7	187	NA	NA	54	120	63	NA	NA	5.3	22	5.9
Port 6	247	NA	NA	170	180	210	NA	NA	6	8	6.5
Port 5	287	NA	NA	35	17	3	NA	NA	13	27	19
Port 4	307	NA	NA	45	5.3	1.5	NA	NA	7.3	14	10
Port 3	352	NA	NA	41	18	4.8	NA	NA	1.6	1.4	1.3
Port 2	402	NA	NA	54	5.9	2.7	NA	NA	1.7	0.62	0.31J
Port 1	482	NA	NA	77	15	2	NA	NA	2.1	0.71	ND
SVP-2 - Southeast of SVP-9											
Port 10	53	4.9	1	1	0.93	0.36J	0.68	0.14J	ND	ND	ND
Port 9	103	20	18	45	39	21	0.86	0.38J	0.46J	ND	0.36J
Port 8	153	25	18	22	18	20	2.8	2.3	2.4	2.4	3.1
Port 7	193	18	42	14	12	17	3.2	2.3	2.5	2.8	2.8
Port 6	253	25	17	31	19	30	1.8	4.3	3.3	3.8	4
Port 5	293	24	23	26	23	45	5.8	2.2	3.7	3.9	4.2
Port 4	333	23	21	22	21	32	2.8	2.6	2.8	5.4	4.4
Port 3	373	16	38	23	18	29	1.6	4.4	3.8	3.6	4.8
Port 2	413	13	17	12	14	20	1.4	2.3	2	3.1	2.8
Port 1	450	22	15	14	15	13	2.4	1.8	1.6	1.5	1.3
SVP-4 - South of SVP-9, at old distilling well location											
Port 10	48	1.3	1.6	1.3	ND	0.36J	0.37J	0.31J	0.24J	ND	0.23J
Port 9	103	2.7	2.9	1.6	1.3	1.6	15	14	4.7	4	1.1
Port 8	148	90	16	31	25	18	41	16	12	10	10
Port 7	188	260	120	62	27	49	14	25	13	10	13
Port 6	248	220	94	62	44	55	350	94	150	120	120
Port 5	288	260	130	76	30/34	47	220	100	200	83/91	120
Port 4	308	280	200	56	41	41	180	200	140	100	84
Port 3	353	64	180	51	37	41	21	210	120	110	100
Port 2	400	26	22	12	13	8.9	20	29	27	27	16
Port 1	420	30	21	12	14	12	7.3	21	24	25	20
SVP-3 - East of SVP-4, by Mall Entrance											
Port 7	53	ND	ND	ND	ND	0.14J	0.72	0.54	0.19J	0.32J	ND
Port 6	103	ND	ND	ND	ND	0.13J	0.65	0.64	0.28J	0.49J	0.45J
Port 5	173	0.4J	1	0.97	0.86	0.76	0.39J	0.46J	0.33J	0.38J	0.45J
Port 4	293	ND	0.51	0.79	0.72	0.84	0.54	0.24J	0.25J	0.29J	0.36J
Port 3	373	8.9	13	18	19	16	0.25J	0.3J	0.15J	ND	ND
Port 2	393	3.3	14	25	30	23	0.39J	ND	ND	ND	ND
Port 1	450	1.9	6.1	5.9	8.3	13	0.2J	ND	ND	ND	ND
SVP-10 - South of SVP-4											
Port 10	47	NA	NA	ND	0.31J	0.58	NA	NA	ND	ND	ND
Port 9	102	NA	NA	3.4	3.9	1.2	NA	NA	ND	0.36J	ND
Port 8	147	NA	NA	41	44	49	NA	NA	0.65	0.69	1.2
Port 7	187	NA	NA	67	140	79	NA	NA	1.7	3.4	2.4
Port 6	247	NA	NA	5.5	3	4.1	NA	NA	ND	ND	ND
Port 5	287	NA	NA	150/240	220/220	60	NA	NA	2.1	1.9/1.6	4.1
Port 4	307	NA	NA	58	130	77D	NA	NA	1.3	2.7	12J
Port 3	352	NA	NA	120	130	50	NA	NA	92	300	230
Port 2	402	NA	NA	540	960	630	NA	NA	13	31	26
Port 1	482	NA	NA	24	24	25	NA	NA	1.8	1.4	0.55
N-10019 - Next to SVP-10											
Screen	223-228	260	170	5.5	3.1/2.9	98	2	2.2	ND	ND/ND	5.3J
SVP-5 - East of SVP-10											
Port 10	48	0.11J	1.6	0.18J	ND	ND	0.11J	0.37J	ND	ND	ND
Port 9	98	4.4	0.19J	0.18J	ND	0.14J	0.81J	0.11J	ND	ND	ND
Port 8	153	0.91	1.7	1.6	0.83	0.64	0.33J	0.49J	0.31J	ND	ND
Port 7	193	2.6	2.1	0.55	0.63	0.62	0.5	0.4J	0.13J	ND	0.22J
Port 6	253	5	12	4.7	4.3	5.7	0.31J	0.72	0.3J	0.33J	0.41J
Port 5	293	19	18	10	6.1	8.5	0.62	0.6	0.41J	0.33J	0.46J
Port 4	313	14	18	8.7	7.7	8	0.72	0.73	0.42J	0.35J	0.48J

Table 3-2
TCE and PCE Detections - Rounds 1 through 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Wells Listed from North to South along Groundwater Flow Direction

Multi-port Well/Well	Location/Depth of Port (ft bgs)	TCE R1 µg/L	TCE R2 µg/L	TCE R3 µg/L	TCE R4 µg/L	TCE R5 µg/L	PCE R1 µg/L	PCE R2 µg/L	PCE R3 µg/L	PCE R4 µg/L	PCE R5 µg/L
Port 3	358	12	14	4.3	4	4.5	0.55	0.63	ND	0.62	0.59
Port 2	408	32	28	56	43	41	0.95	0.92	1.2	1	0.999
Port 1	430	6.6	9.3	4	4	6.1	0.5	0.35J	0.17J	ND	0.21J
N-10020 - Southeast of SVP-5											
Screen	185-190	1.6	0.14J	0.15J	ND	0.25J	1.3	ND	ND	ND	0.3J
Supply Wells											
Supply well 10	377-417	170	220	40	42	25	270	230	93	150	54
Supply well 11	370-410	160	160	100	60	96	50	58	110	91	130
SVP-11 - At School											
Port 10	47	NA	NA	ND	ND	ND	NA	NA	ND	ND	ND
Port 9	102	NA	NA	ND	ND	0.3J	NA	NA	ND	ND	ND
Port 8	147	NA	NA	1.8	0.99	1.7	NA	NA	0.48J	0.34J	0.39J
Port 7	187	NA	NA	9	6.4	9.1	NA	NA	1.5	1.3	1.1
Port 6	247	NA	NA	39	97	38	NA	NA	6.6	6	4.9
Port 5	287	NA	NA	74	160	110	NA	NA	3.6	15	11
Port 4	307	NA	NA	62	180	58	NA	NA	2.2	6.7	3.2
Port 3	352	NA	NA	210	270/250	51	NA	NA	7.3	12/8.4	2
Port 2	402	NA	NA	68	19	110	NA	NA	28	5.7	42
Port 1	482	NA	NA	150	430	230	NA	NA	0.99J	2.5	1.6
N-8068 - East of School (Near Southern End of Ring Road)											
Screen	265-291	NA	54	NA	76	120	NA	170	NA	420	350
SVP-12 - South of School											
Port 6	245	NA	NA	NA	24/20	25	NA	NA	NA	4.4/3.8	4.8
Port 5	295	NA	NA	NA	24	20	NA	NA	NA	4.4	4.7
Port 4	355	NA	NA	NA	95	70	NA	NA	NA	5.8	5.1
Port 3	405	NA	NA	NA	90	90	NA	NA	NA	5.6	4.8
Port 2	485	NA	NA	NA	43	61	NA	NA	NA	2.6	0.8
Port 1	515	NA	NA	NA	1.9/6	1	NA	NA	NA	0.52/0.66	ND
MW-12S - Same Location as SVP-12											
Screen	90-110	NA	NA	NA	NA	0.21J	NA	NA	NA	NA	0.45J
SVP-13 - Southeast of School											
Port 6	245	NA	NA	NA	19	18	NA	NA	NA	12	4.3
Port 5	295	NA	NA	NA	29	19	NA	NA	NA	13	3.9
Port 4	355	NA	NA	NA	30	19	NA	NA	NA	14	9.2
Port 3	405	NA	NA	NA	100	63	NA	NA	NA	60	17
Port 2	485	NA	NA	NA	18	3.2	NA	NA	NA	9.9	1.2
Port 1	515	NA	NA	NA	18J	8.9	NA	NA	NA	13	5.6
SVP-7 - Southwest of SVP-12											
Port 6	48	ND									
Port 5	103	1.2	1.8	0.36J	0.38J	0.24J	0.45J	0.69	0.14J	0.29J	ND
Port 4	208	0.38J	0.81	0.43J	ND	0.42J	0.21J	0.56	0.2J	ND	0.44J
Port 3	315	9.4	20	12	14	10	2.2	7.7	3.6	5.6	3.9
Port 2	428	0.66	6.2	20	30	43	0.11J	ND	3.3	13	45
Port 1	445	0.18J	0.24J	3.3	15	38	ND	ND	1.1	13	31
SVP-14 - In Neighborhood Between SVP-12 and SVP-8											
Port 10	85	NA	NA	NA	NA	ND	NA	NA	NA	NA	0.25J
Port 9	100	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND
Port 8	145	NA	NA	NA	NA	ND	NA	NA	NA	NA	ND
Port 7	185	NA	NA	NA	NA	ND	NA	NA	NA	NA	0.51
Port 6	250	NA	NA	NA	NA	ND	NA	NA	NA	NA	1.1
Port 5	300	NA	NA	NA	NA	1.6	NA	NA	NA	NA	4
Port 4	360	NA	NA	NA	NA	17	NA	NA	NA	NA	1.4
Port 3	410	NA	NA	NA	NA	0.38J	NA	NA	NA	NA	ND
Port 2	490	NA	NA	NA	NA	17	NA	NA	NA	NA	0.52
Port 1	530	NA	NA	NA	NA	60	NA	NA	NA	NA	1.4
SVP-8 - Just North of Hempstead Wellfield											
Port 6	48	ND	ND	ND	0.24J	0.92	0.35J	ND	ND	ND	2
Port 5	103	1.6	2	1.3	1.5	0.99	34	57	26	51J	29
Port 4	158	1	1.6	1.3	0.83	1.5	17	23	16	27J	21
Port 3	238	1.2	1.1	1.1	0.81	1.5	15	23	20	28J	26
Port 2	373	1.5	3.2	4.9	4.5	4.8	1.9	13	18	27	20

Table 3-2
TCE and PCE Detections - Rounds 1 through 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

Wells Listed from North to South along Groundwater Flow Direction

Multi-port Well/Well	Location/Depth of Port (ft bgs)	TCE R1 µg/L	TCE R2 µg/L	TCE R3 µg/L	TCE R4 µg/L	TCE R5 µg/L	PCE R1 µg/L	PCE R2 µg/L	PCE R3 µg/L	PCE R4 µg/L	PCE R5 µg/L
Port 1	435	1.9	1.4	2	1.8	1.6	1.9	6.7	8.1	8.2	6.6
MW-8D - Same Location as SVP-8											
Screen	515-535	NA	NA	NA	NA	0.97	NA	NA	NA	NA	ND
SVP-6 - East of SVP-8											
Port 6	50	0.26J	ND	ND	ND	0.4J	0.11J	0.087J	0.24J	ND	ND
Port 5	105	4.3	2.5	1	2.7	0.64	1.1	0.54	ND	ND	ND
Port 4	180	2.1	1	0.75	0.57	0.35J	0.52	0.24J	ND	ND	ND
Port 3	250	8.2	2.3	0.48J	1.1	2.3	0.7	0.29J	ND	ND	ND
Port 2	370	0.33J	ND								
Port 1	447	1.7	1.4	0.18J	0.45J	0.67	0.23J	ND	ND	ND	ND

Wells listed from North to South along the groundwater flow direction

ft bgs = feet below ground surface; TCE = trichloroethene; PCE = tetrachloroethene; R = Sampling Round;

J = estimated value; ND = not detected

µg/L = microgram per liter

Sampling Dates:

Round 1 - April 2006

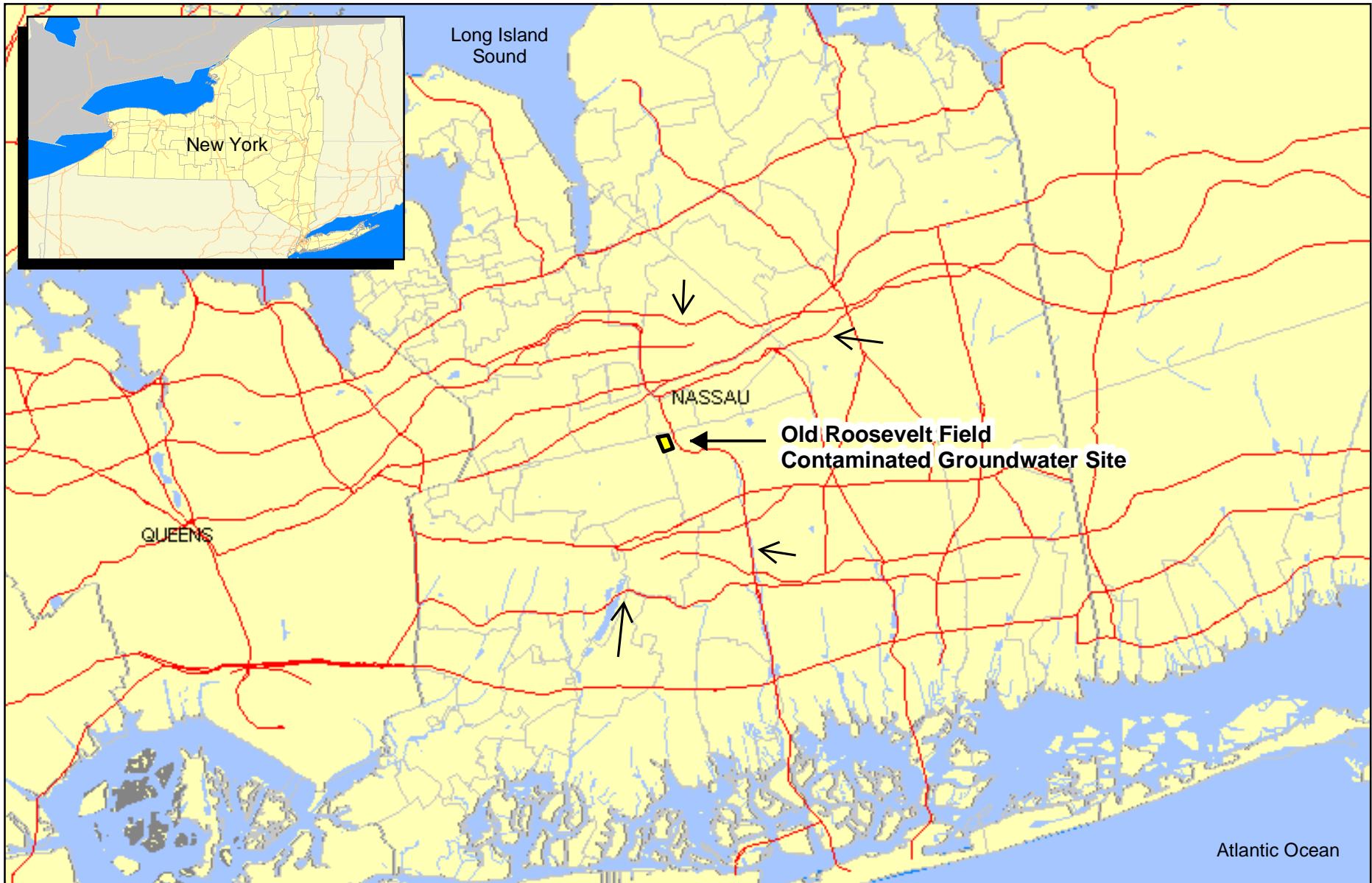
Round 2 - July 2006

Round 3 - October 2008

Round 4 - July 2009

Round 5 - September 2011

Figures



adapted from NYSDEC Interactive Mapping Gateway: <http://www.nygis.state.ny.us/gateway/index.html>

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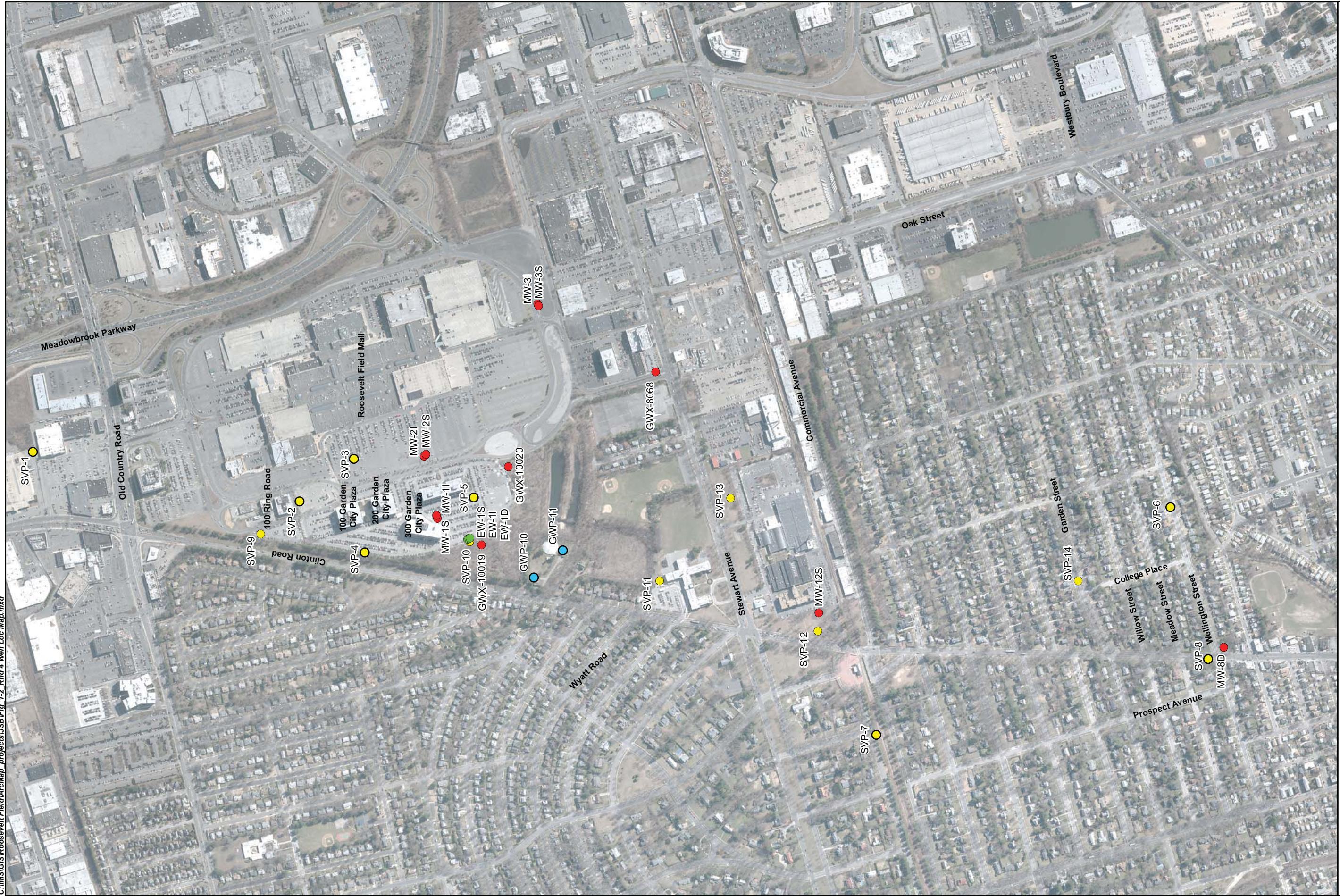
Figure 1-1
Site Location Map
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York



Figure 1-2
Site Map
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

0.25 Miles
0.125 Miles
0 Miles

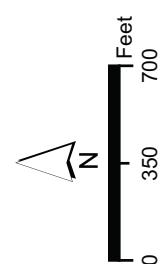
CDM Smith

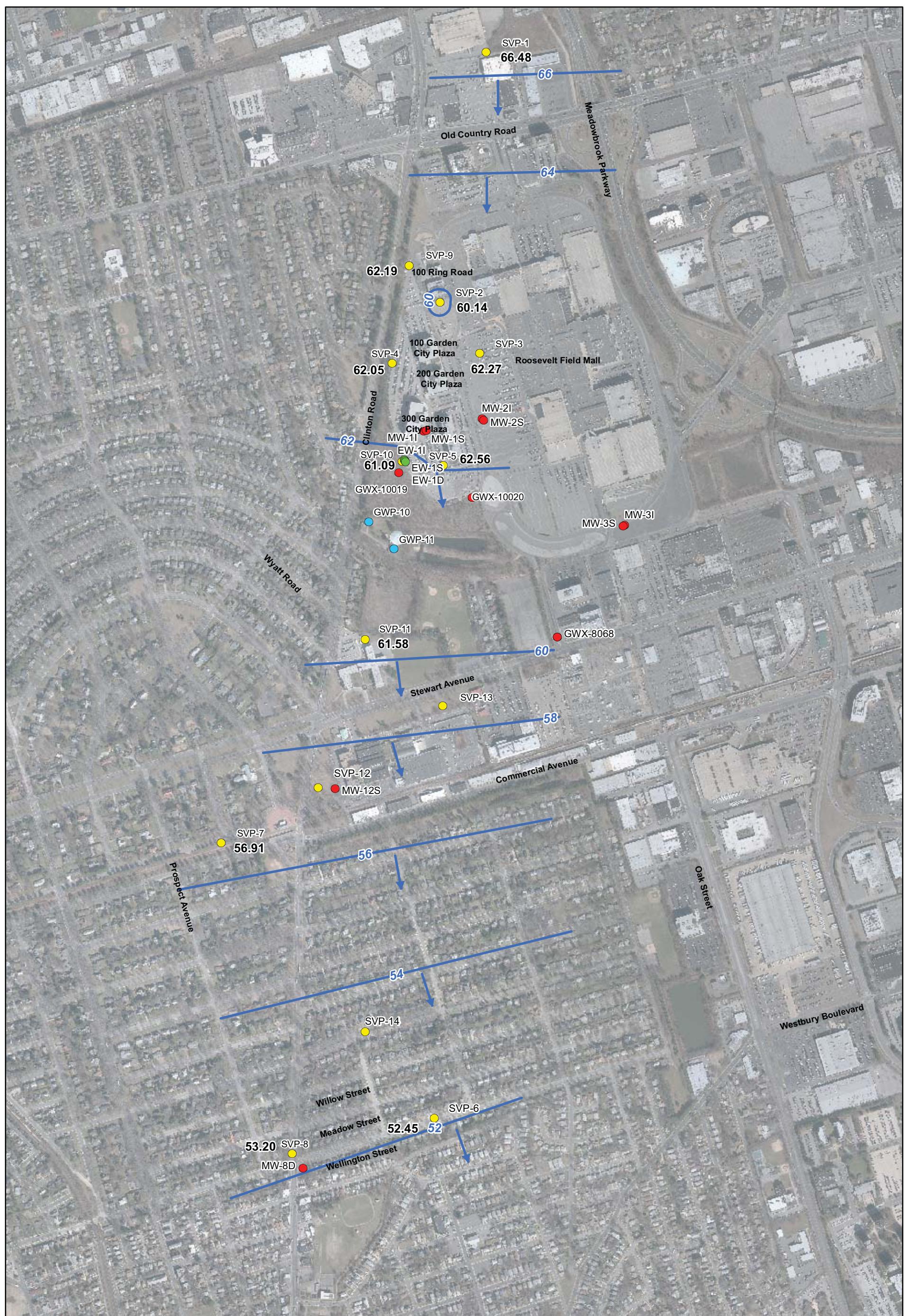


● Municipal Pumping Well
● Multiport Well
● Conventional Well
● Extraction Well

**CDM
Smith**

Figure 2-1
**Baseline RA/Round 5 Multiport Well, Monitoring Well,
and Supply Well Locations
Old Roosevelt Contaminated Groundwater Site
Garden City, New York**





- Municipal Pumping Well
- Multiport Well
- Conventional Well
- Extraction Well
- Contour

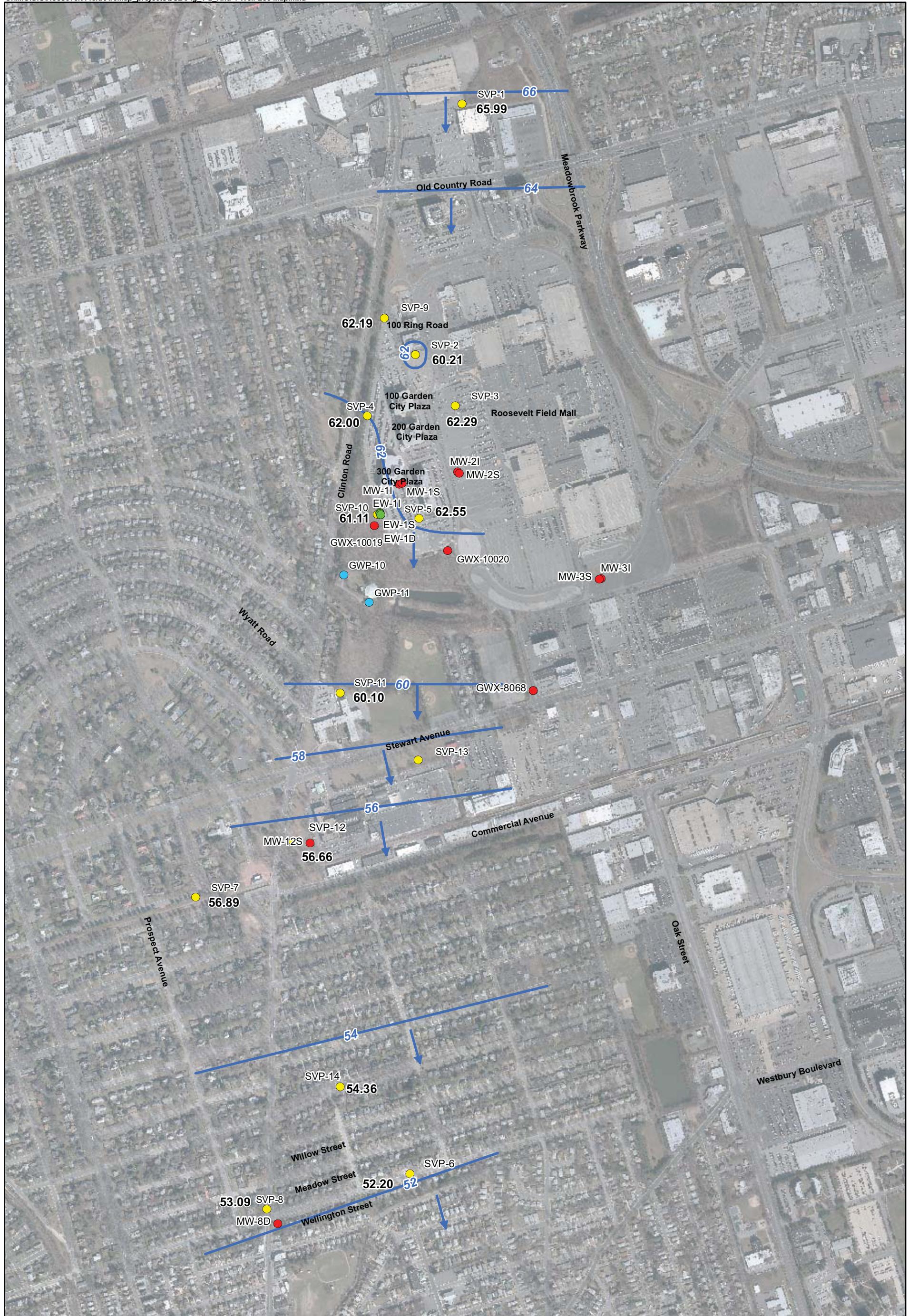
Note:
62.19 Groundwater elevation (feet above mean sea level)

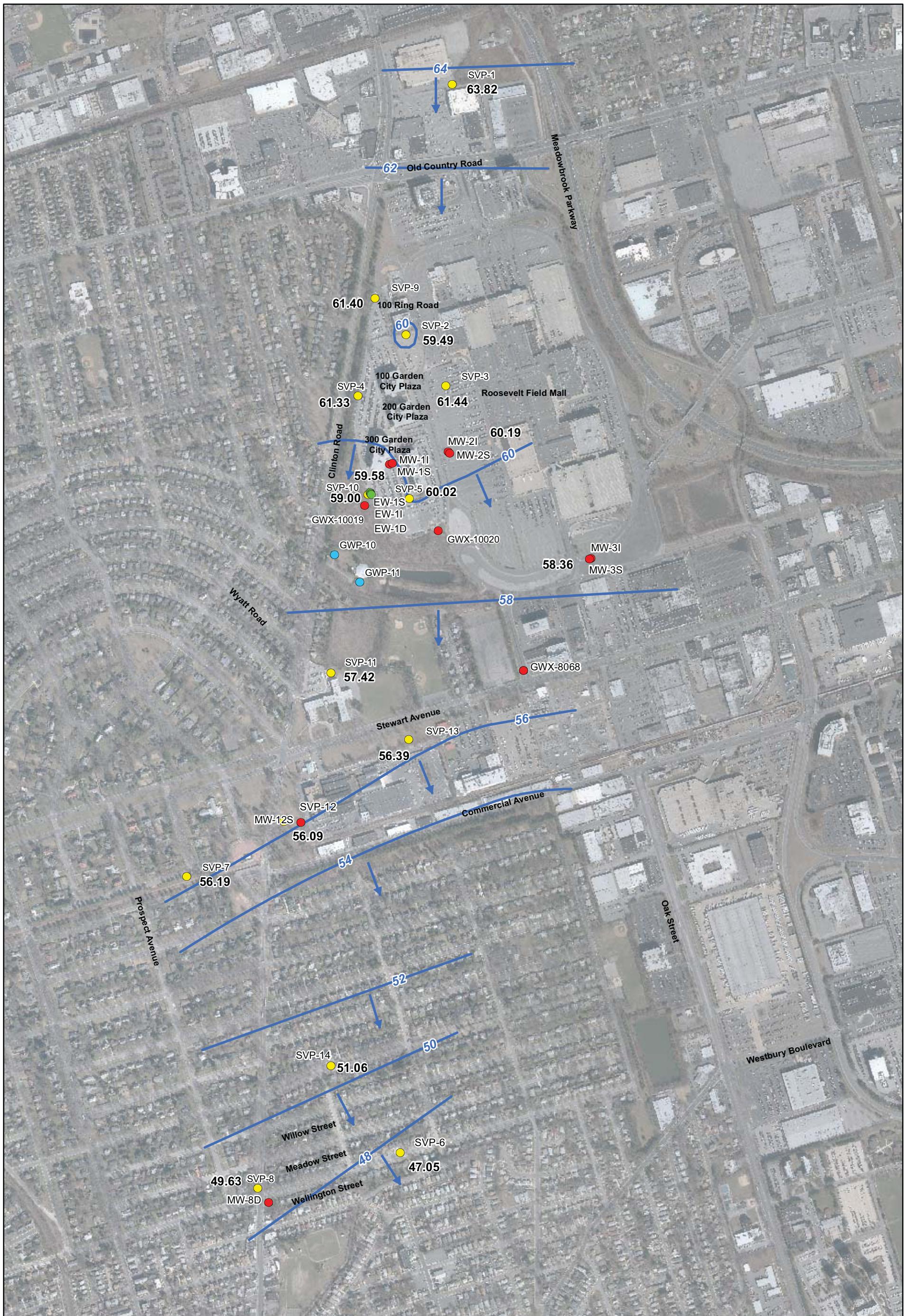
Flow direction



0 375 750 Feet

Figure 3-1a
Round 5 Groundwater Elevation Contour Map
Water Table (50 feet bgs)
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York





- Municipal Pumping Well
- Multiport Well
- Conventional Well
- Extraction Well
- Contour

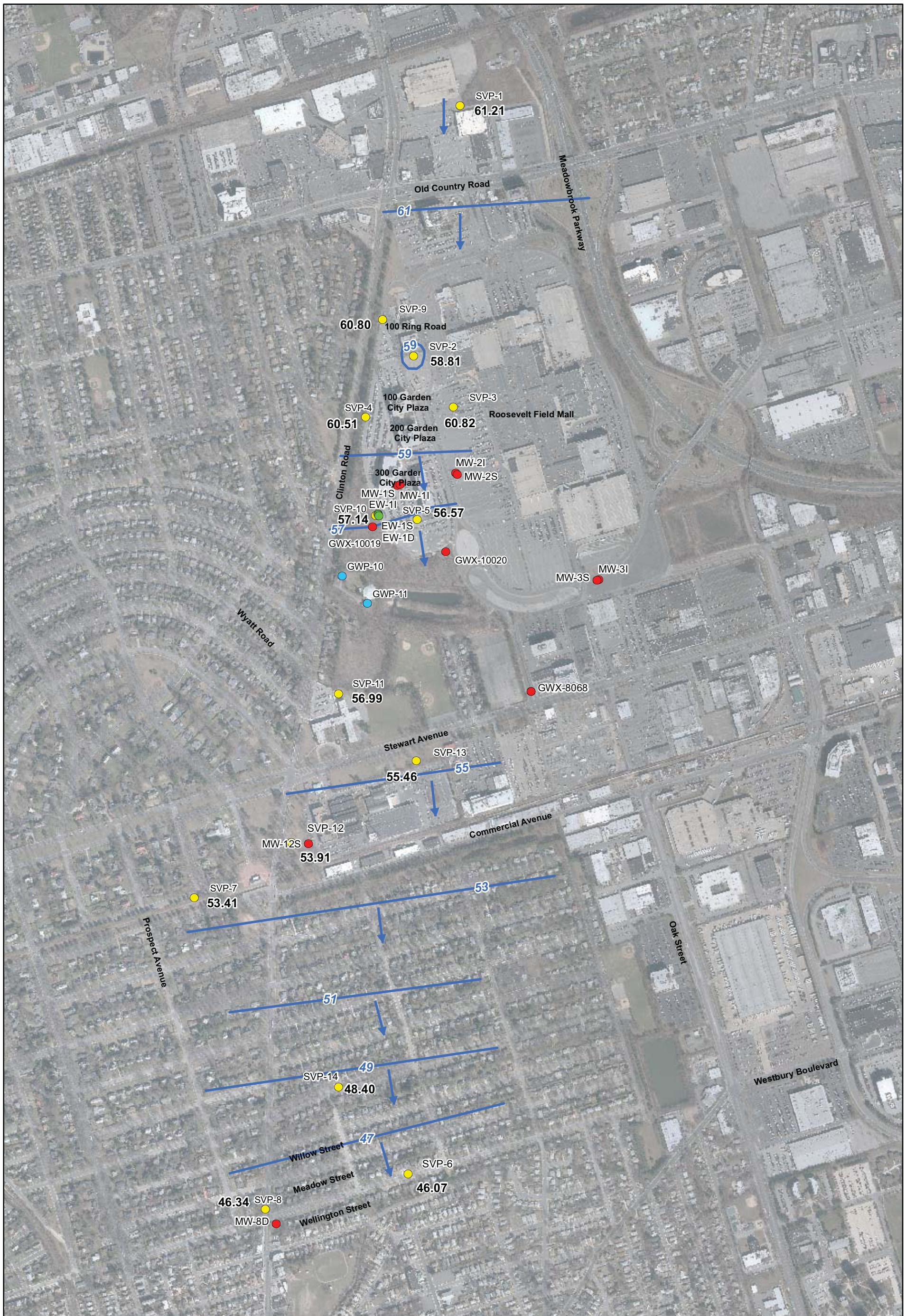
Note:
62.19 Groundwater elevation (feet above mean sea level)

Flow direction



0 375 750 Feet

Figure 3-1c
Round 5 Groundwater Elevation Contour Map
Middle of Magothy Formation (250 feet bgs)
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York



- Municipal Pumping Well
- Multiport Well
- Conventional Well
- Extraction Well
- Contour

Note:
62.19 Groundwater elevation (feet above mean sea level)

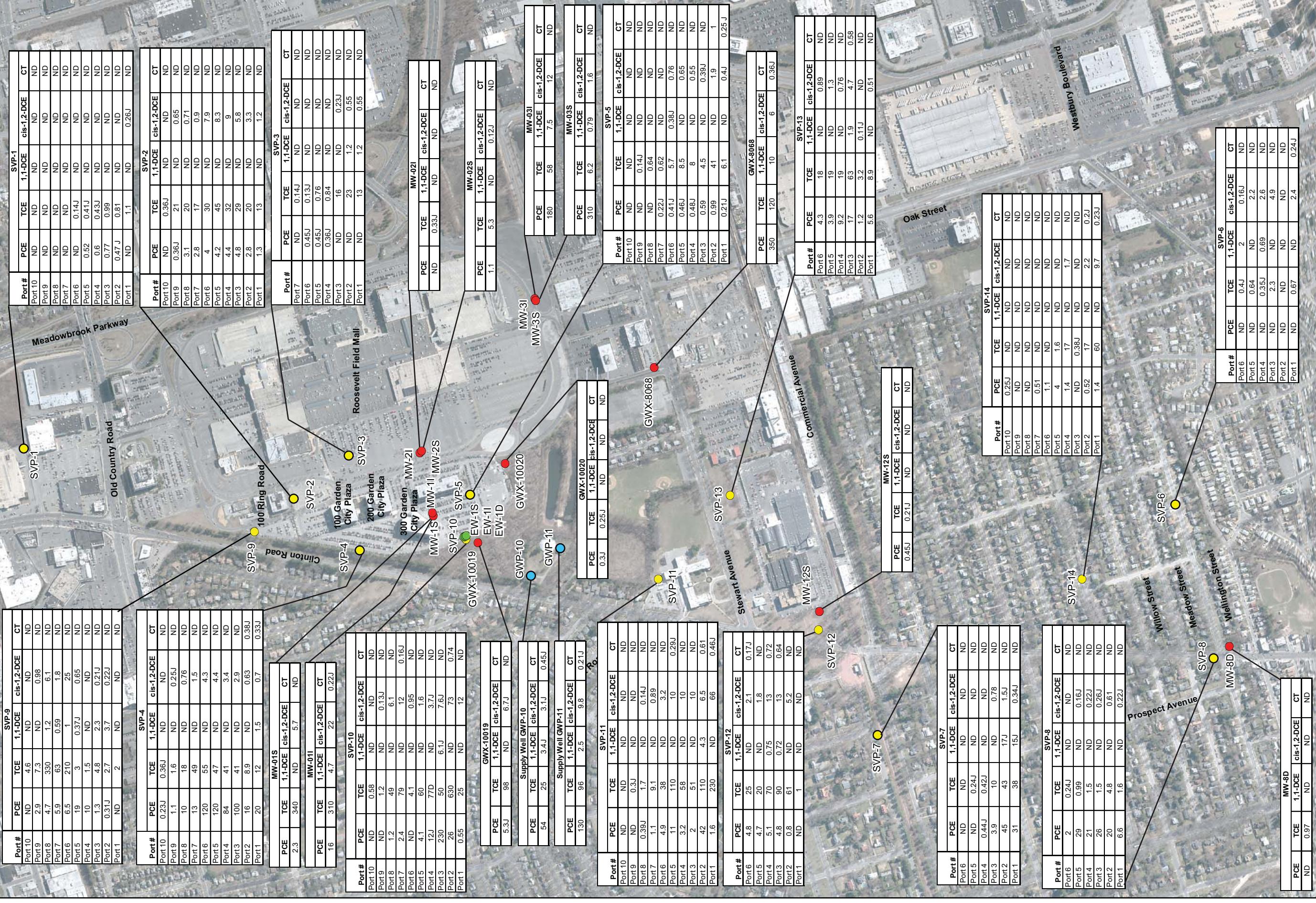
Flow direction

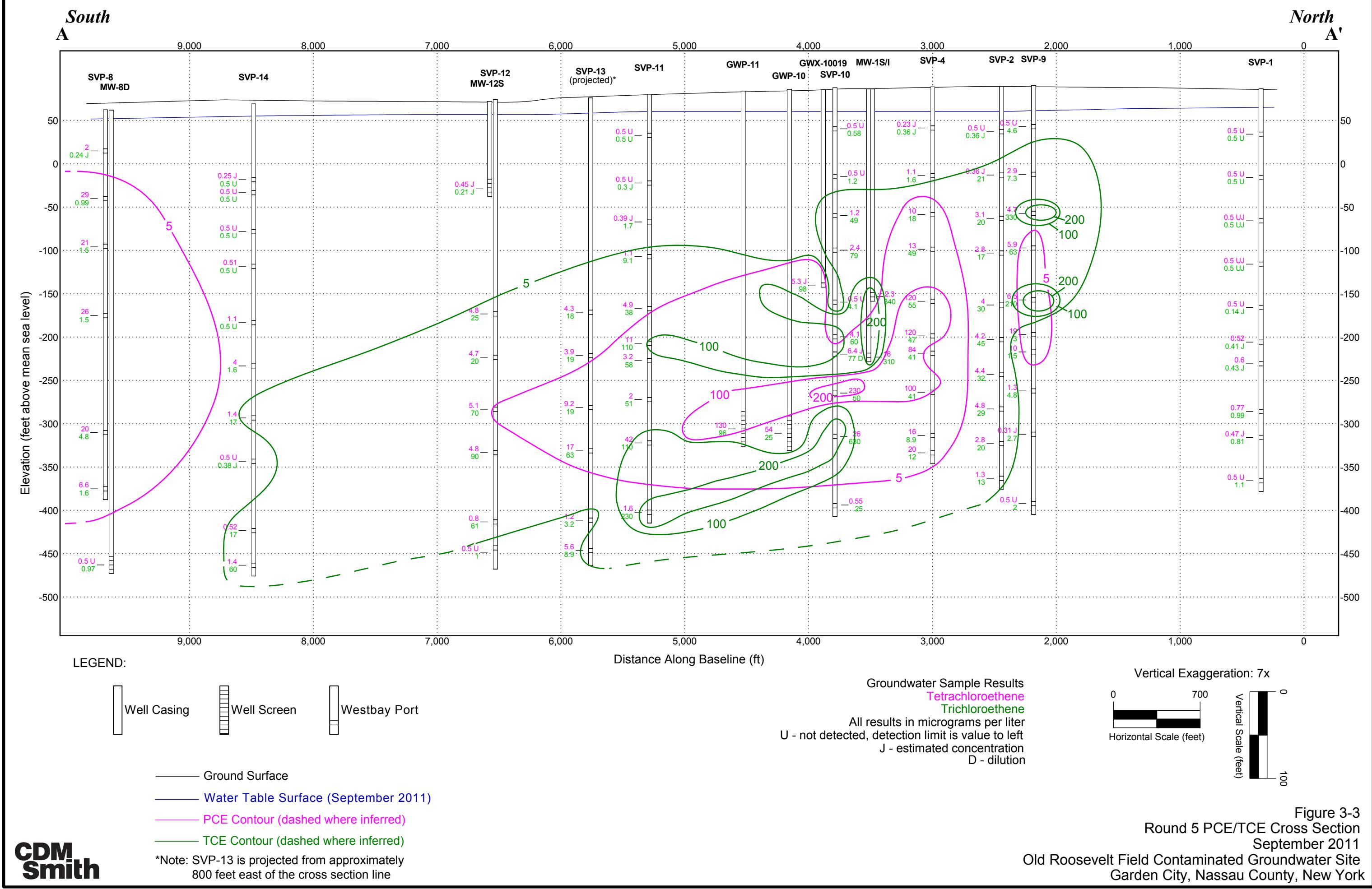


0 375 750 Feet

Figure 3-1d
Round 5 Groundwater Elevation Contour Map
Deep Groundwater (400 feet bgs)
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

C:\MSIGIS\Roosevelt Field\ArcMap_projects\JSB\Fig 1-2_Rnd 4 Well Loc Map.mxd





Appendix A

Field Change Requests



125 Maiden Lane, 5th Floor
New York, New York 10038
tel: 212 785-9123
fax: 212 785-6114

January 20, 2011

Mr. William Sy
EPA QA Officer for RAC 2
U.S. Environmental Protection Agency
2890 Woodbridge Avenue
Edison, New Jersey 08837

PROJECT: RAC 2 Contract No.: EP-W-09-002
Work Assignment No.: 008-RDRD-02PE

DOCUMENT No.: 3320-008-00718

SUBJECT: Field Change Request Form #8
Remedial Design Investigation
Old Roosevelt Field Contaminated Groundwater Area Site
Garden City, New York

Dear Mr. Sy:

CDM Federal Programs Corporation (CDM) is pleased to submit the following Field Change Request Form for the Remedial Design Investigation Sampling Activities at the Old Roosevelt Field Contaminated Groundwater Area Site, Garden City, New York, titled: *Additional Well Installation; Round 5 Groundwater Sampling Event; Metals and Mercury Analytical Method Update.*

If you have any questions regarding this submittal, please contact me at (212) 377-4536.

Very truly yours,

CDM FEDERAL PROGRAMS CORPORATION

Jennifer Oxford
RAC2 QA Coordinator

Enclosure

cc: H. Eng, EPA (Letter Only)
C. Kwan, EPA
L. Campbell, CDM
M. Ehnot, CDM

J. Litwin, CDM (Letter Only)
T. Matthew, CDM
RAC 2 Document Control

Old Roosevelt Field Contaminated Groundwater Area Site
Supplemental Remedial Design
Garden City, NY

Field Change Request

Date: January 17, 2011

Request No.: 8

FCR Title: Additional Well Installation; Round 5 Groundwater Sampling Event; Metals and Mercury Analytical Method Update

Description: This Field Change Request (FCR) describes the installation of three additional wells, followed by a groundwater sampling event (Round 5) at the Old Roosevelt Field Contaminated Groundwater Area Site. This additional work is also described in the March 19, 2010 CDM Work Plan Letter submitted to EPA.

CDM installed two monitoring wells (SVP-12 and SVP-13), followed by a groundwater sampling event (Round 4) in 2009, as described in the February 16, 2009 Addendum No. X to the Final QAPP (dated March 14, 2008). Following review of the analytical results from the Round 4 groundwater sampling event, Environmental Protection Agency (EPA) and CDM determined that additional wells are needed to delineate the extent of the volatile organic compounds (VOCs) in the southern portion of the groundwater plume. This FCR documents the changes to the February 16, 2009 QAPP Addendum to account for the three additional wells and the Round 5 groundwater sampling event. This FCR also addresses the method change for TAL metals and mercury analysis from ILM05.4 to ISM01.2, as directed by EPA Regional Sample Control Center.

Reason for Deviation: Analytical results of the 2009 groundwater sampling event revealed that additional data was needed at the SVP-8 and SVP-12 well locations. Additionally, groundwater data was needed at a location between SVP-6, SVP-7, SVP-8, and SVP-12, to delineate the contaminant plume.

At SVP-8, the bottommost sampling port was installed at 435 feet below ground surface (bgs). However, VOC contaminant concentrations above the project action limits were detected in the bottom five sampling ports. Therefore, groundwater data is needed at this locale at a depth greater than 435 feet bgs to delineate the horizontal extent of the contaminant plume.

At SVP-12, the uppermost sampling port was installed at 245 feet bgs; however, VOC contaminant concentrations above the project action limits were detected at the upper sampling ports. Therefore, groundwater data is needed at a shallow depth at this locale, to delineate the horizontal extent of the contaminant plume.

VOC contaminant concentrations above the site specific standard were detected in several ports at SVP-7, SVP-8 and SVP-12; however, only one port at SVP-6 had a VOC contaminant above

the project action limit. Therefore, groundwater data is needed at a location between these four wells to delineate the vertical and lateral extent of the contaminant plume.

Following installation of the three new wells, a groundwater sampling event including all onsite wells will be conducted to obtain groundwater data.

The EPA CLP changed the mercury and metals analytical method to address lower reporting limits and additional techniques available by the new method.

Recommended/Modification: Install two conventional monitoring wells (MW-8D and MW-12S) and one multi-port monitoring well (SVP-14). MW-8D and MW-12S adjacent to SVP-8 and SVP-12, respectively. MW-8D, MW-12S and SVP-14 well locations are shown on Figure 1.

MW-8D and MW-12S well installation will consist of borehole drilling, surface casing installation and casing/screen installation. MW-8D and MW-12S boreholes will be drilled by advancing a nominal 12-inch diameter drill bit, via mud rotary drilling methods, to a depth of approximately 80 feet bgs. Then an 8-inch diameter carbon steel surface casing will be installed to a depth of 80 feet and grout will be pumped into the borehole annulus via tremie pipe from 80 feet and extending up to the surface. Boreholes will be completed by advancing a nominal 8-inch diameter drill bit, via mud rotary drilling, to a depth of 535 feet bgs for MW-8D and to a depth of 110 feet bgs for MW-12S. Subsequently, a 4-inch inside diameter (ID) Type 304, Schedule 10 stainless steel casing and well screen assembly will be installed into the boreholes. MW-8D and MW-12S will have 20-foot length, 10-slot, stainless steel well screens set at 515 - 535 feet and 90-110 feet depth intervals, respectively. Boreholes will be backfilled by placing Filpro #1 sand into the borehole annulus via tremie pipe, from the bottommost depth and extending upward a minimum of 3 feet above the top of the well screen. Approximately 2 feet of Filpro #00 sand will be added to the borehole annulus, as above, above the Filpro #1 sand. Ultimately grout will be placed into the borehole annulus, as above, from the top of the Filpro #00 sand and extending up to the surface.

SVP-14 well installation will consist of borehole drilling, surface casing installation, casing/screen installation, and Westbay well installation. SVP-14 borehole will be drilled by advancing a nominal 14-inch diameter drill bit, via mud rotary drilling methods, to a depth of approximately 80 feet bgs. Then a 10-inch diameter carbon steel surface casing will be installed to a depth of 80 feet bgs and grouted in the same manner as described above. SVP-14 borehole will be completed by advancing a nominal 10-inch diameter drill bit, via mud rotary drilling, to a depth of 545 feet bgs. Subsequently, a 4-inch ID Type 304, Schedule 10 stainless steel casing and screen assembly will be installed into the borehole. The SVP-14 casing/screen assembly will have 10 five-foot length, 10-slot, stainless steel well screens set at the following depth intervals:

Port 1: 530 feet - 535 feet	Port 6: 250 feet - 255 feet
Port 2: 490 feet - 495 feet	Port 7: 185 feet - 190 feet
Port 3: 410 feet - 435 feet	Port 8: 145 feet - 150 feet
Port 4: 360 feet - 365 feet	Port 9: 100 feet - 105 feet
Port 5: 300 feet - 305 feet	Port 10: 45 feet - 50 feet

SVP-14 borehole will be backfilled by placing Filpro #1 sand into the borehole annulus via tremie pipe, from the bottommost depth and extending upward a minimum of 5 feet above the top of the bottommost screen. A 1:1 mixture of bentonite/Filpro #1 sand slurry will be pumped into the borehole annulus, via tremie pipe, above the Filpro #1 sand and extending up to a depth of 10 feet below the bottom of the next well screen. Subsequently, Filpro #1 sand will be added to the borehole annulus, as above, followed by placement of the bentonite/sand slurry, as above, for each well screen, until Filpro #1 sand is 5 feet above the uppermost screen. The bentonite/sand slurry will be in accordance to Field Change Request #6. [Note: Filpro #1 sand will be placed into borehole annulus adjacent to the well screen and will extend from a depth of approximately 10 feet below the screen bottom to a minimum of 5 feet above the top of the screen.] Ultimately, a 5-foot thick bentonite/sand slurry will be placed above the Filpro #1 sand followed by grout extending up to the surface. Following backfilling, Westbay personnel will install a Westbay multi-port well inside the stainless steel casing/screen assembly and Westbay ports will be installed at depths corresponding to the well screen intervals as stated in QAPP Worksheet#17c.

Well development of the MW-8D, MW-12S, and SVP-14 well screens will be performed in the manner described in Final QAPP Appendix B TSOP 4-3 and Field Change Request #7. The SVP-14 Westbay ports will be developed as stated in Final QAPP Appendix E Subsection Appendix A3.0.

A flush-mount protective casing and well pad will be installed at the surface of each well and top of each well will be fitted with a 4-inch diameter expandable cap.

Note: CDM will perform gamma logging at MW-8D and SVP-14, following casing/screen assembly installation, in the manner stated in Final QAPP Worksheet #17c and described in Appendix B TSOP 3-4.

Conduct the Round 5 groundwater sampling event of onsite wells to obtain groundwater data. Ground water samples will be collected from 21 onsite wells: 14 multiport wells (SVP-1 through SVP-14), 5 single-screen wells (MW-8D, MW-12S, GWX-10019, GWX-10020, and 8068) and 2 supply wells (No. 10 and No. 11). Groundwater samples will be analyzed as follows:

- Trace-Level VOCs: All ports and well samples (124 samples total)
- Inorganics: SVP-14 Port 1 through Port 10 (10 samples total)
- Filtered and Unfiltered Iron & Manganese:
 - SVP-11 (Port 2, Port 4, Port 7, Port 10)
 - SVP-14 (Port 2, Port 4, Port 7, Port 10)
 - MW-12S
 - [18 samples total—9 filtered and 9 unfiltered]
- Total Dissolved Solids, Ammonia, Total Kjehldahl Nitrogen & Hardness:
 - SVP-14 (Port 2, Port 4, Port 7, Port 10)
 - [4 samples each per parameter for 16 samples total]

Groundwater samples will be collected according to procedures stated in Final QAPP Worksheets #17e, #17f and #17h. Quality control tasks, data management tasks, and documentation and records stated in Worksheet #14 will be applicable.

The EPA Contract Laboratory Program has implemented updated inorganic procedures; therefore, method ISM01.2 for mercury and metals groundwater analysis (with the appropriate Modified Analyses numbers) will be used in all future analysis for this project. QAPP Worksheets #12, #15, #20, and #28 and all references to ILM05.4 in the previous QAPPs are hereby superseded by ISM01.2. The QC information and data validation references remain the same.

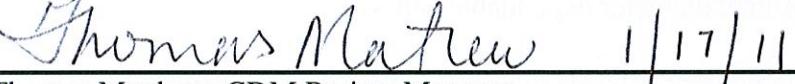
Impact on Data Quality Objectives: Data quality objectives will be enhanced because groundwater analytical data from these three new wells will help delineate the vertical and lateral extent of the contaminant in the downgradient portion of the plume. Lower detection limits will facilitate better achievement of the project's sensitivity requirements.

RAC II Contract No.: EP-W-09-002
Work Assignment No.: 008-RDRD-02PE

Signatures:

 1/17/11

Mike Ehnot, CDM Field Team Leader

 1/17/11

Thomas Matthew, CDM Project Manager

cc:

Caroline Kwan, EPA Remedial Project Manager
Thomas Matthew, CDM Project Manager
Lisa Campbell, CDM Task Manager
Jeniffer Oxford, CDM Quality Assurance Coordinator
Mike Ehnot, CDM Field Team Leader
CDM Roosevelt Field Team



Figure 1
Proposed Additional Wells
Old Roosevelt Field Contaminated Groundwater Site
Garden City, New York

- Municipal Pumping Well
- Existing RI Multi-port Well
- Existing Conventional Well
- Existing RD Multi-port Well
- △ Proposed New Conventional Well
- Proposed New Multi-port Well



0 350 700 1,400 Feet

CDM



<http://www.epa.gov/superfund/programs/clp/ismtarget.htm>

Last updated on Friday, October 01, 2010

Superfund Analytical Services / Contract Laboratory Program

You are here: [EPA Home](#) [Superfund Home](#) [Programs](#) [Superfund Analytical Services/Contract Laboratory Program \(CLP\)](#) [Services](#) [Analytical Services](#) [Target Compounds and Analytes](#) [ISM01.2 Metals and Cyanide](#)

ISM01.2 Metals and Cyanide Target Analyte List and Corresponding CRQLs

The quantitation limits detailed in the table below are provided as a summary only. For full details regarding ISM01.2 target analytes and Contract Required Quantitation Limits (CRQLs), please refer to Exhibit C of the [ISM01.2 Statement of Work \(SOW\)](#).

ANALYTES	CONTRACT REQUIRED QUANTITATION LIMITS					
	ICP-AES Water (ug/L)	ICP-AES Soil (mg/kg)	ICP-AES Wipes (ug)	ICP-AES Filters (ug)	ICP-MS Water (ug/L)	ICP-MS Soil (mg/kg)
<u>Aluminum</u>	200	20	20	2	20	--
<u>Antimony</u>	60	6	6	0.6	2	1
<u>Arsenic</u>	10	1	1	0.1	1	0.5
<u>Barium</u>	200	20	20	2	10	5
<u>Beryllium</u>	5	0.5	0.5	0.05	1	0.5
<u>Cadmium</u>	5	0.5	0.5	0.05	1	0.5
<u>Calcium</u>	5000	500	500	50	500	--
<u>Chromium</u>	10	1	1	0.10	2	1
<u>Cobalt</u>	50	5	5	0.5	1	0.5
<u>Copper</u>	25	2.5	2.5	0.25	2	1
<u>Iron</u>	100	10	10	1	200	--
<u>Lead</u>	10	1	1	0.1	1	0.5
<u>Magnesium</u>	5000	500	500	50	500	--
<u>Manganese</u>	15	1.5	1.5	0.15	1	0.5
<u>Nickel</u>	40	4	4	0.4	1	0.5
<u>Potassium</u>	5000	500	500	50	500	--
<u>Selenium</u>	35	3.5	3.5	0.35	5	2.5
<u>Silver</u>	10	1	1	0.10	1	0.5
<u>Sodium</u>	5000	500	500	50	500	--
<u>Thallium</u>	25	2.5	2.5	0.25	1	0.5
<u>Vanadium</u>	50	5	5	0.5	5	2.5
<u>Zinc</u>	60	6	6	0.60	2	1
Additional Analytes				Water (ug/L)	Soil (mg/kg)	
Mercury by Cold Vapor Atomic Absorption (CVAA)				0.2	0.1	
Cyanide by Spectrophotometry				10	0.5	

**Old Roosevelt Field Contaminated Groundwater Area Site
Remedial Action
Garden City, NY**

Field Change Request

Date: July 20, 2011

Request No.: 9

FCR Title: Change in Port Interval for SVP-14, Port 10

Description: This FCR documents the change to the Port 10 interval in multiport well SVP-14.

Reason for Deviation: In multiport well SVP-14, the screen interval for the outer casing/screen assembly for Port 10 was originally planned from 45-50 feet below ground surface (bgs), as described in FCR #8 (dated January 17, 2011). However, a gravelly layer which causes the borehole to collapse was encountered from 0-50 feet bgs and from 70-77 feet bgs, which necessitated the installation of the outer casing to 80 feet bgs. Since the outer casing is installed to 80 feet bgs, Port 10 cannot be installed from 45-50 feet bgs. Therefore, the interval for Port 10 will be moved just below the outer casing, screened from 85-90 feet bgs.

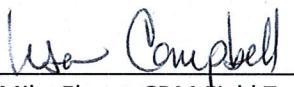
Recommended/Modification: Revise the screen interval for the outer casing/screen assembly at SVP-14 Port 10 from 45-50 feet bgs to 85-90 feet bgs. All other port intervals at SVP-14 will remain the same.

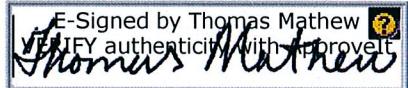
Impact on Data Quality Objectives: The 45-50 foot screen interval was the least critical of the Port intervals, since the purpose of this well was to define the nature and extent of contamination in the deeper portion of the aquifer. Data quality objectives will not be adversely affected by moving Port 10 40 feet deeper.

RAC II Contract No.: EP-W-09-002

Work Assignment No.: 008-RDRD-02PE

Signatures:


for Mike Campbell
Mike Ehnot, CDM Field Team Leader



Thomas Mathew, CDM Project Manager

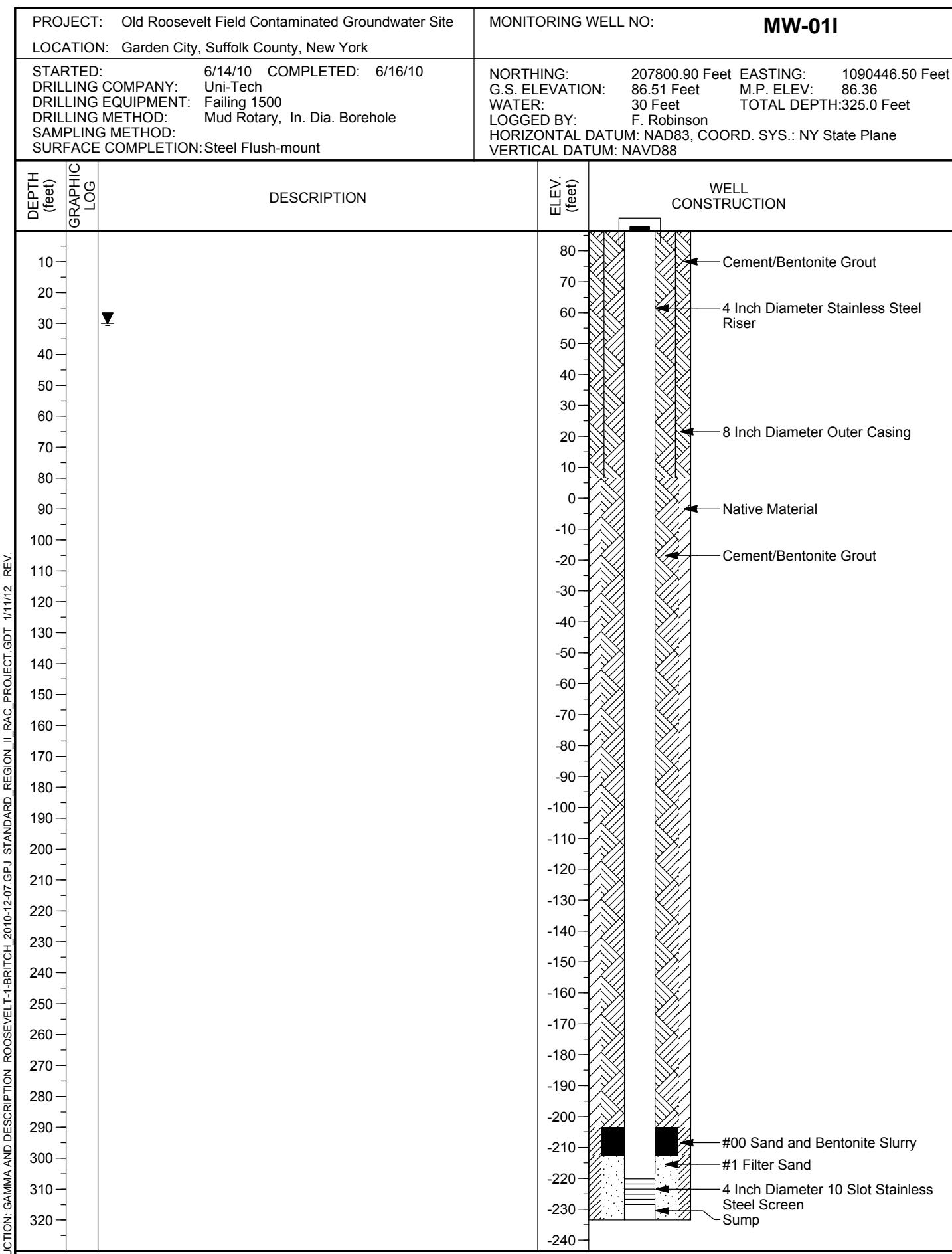
CC:

Caroline Kwan, EPA Remedial Project Manager
William Sy, EPA QA Officer
Lisa Campbell, CDM PRDI Task Manager

Jeniffer Oxford, CDM Quality Assurance Coordinator
Roosevelt Field PRDI Field Team

Appendix B

Well Construction Logs



WELL CONSTRUCTION: GAMMA AND DESCRIPTION ROOSEVELT-1-BRITCH 2010-12-07 GPJ STANDARD REGION II RAC PROJECT GDT 1/11/12 REV.

110 Fieldcrest Avenue

Edison, New Jersey

6th Floor

Telephone: 732-225-7000

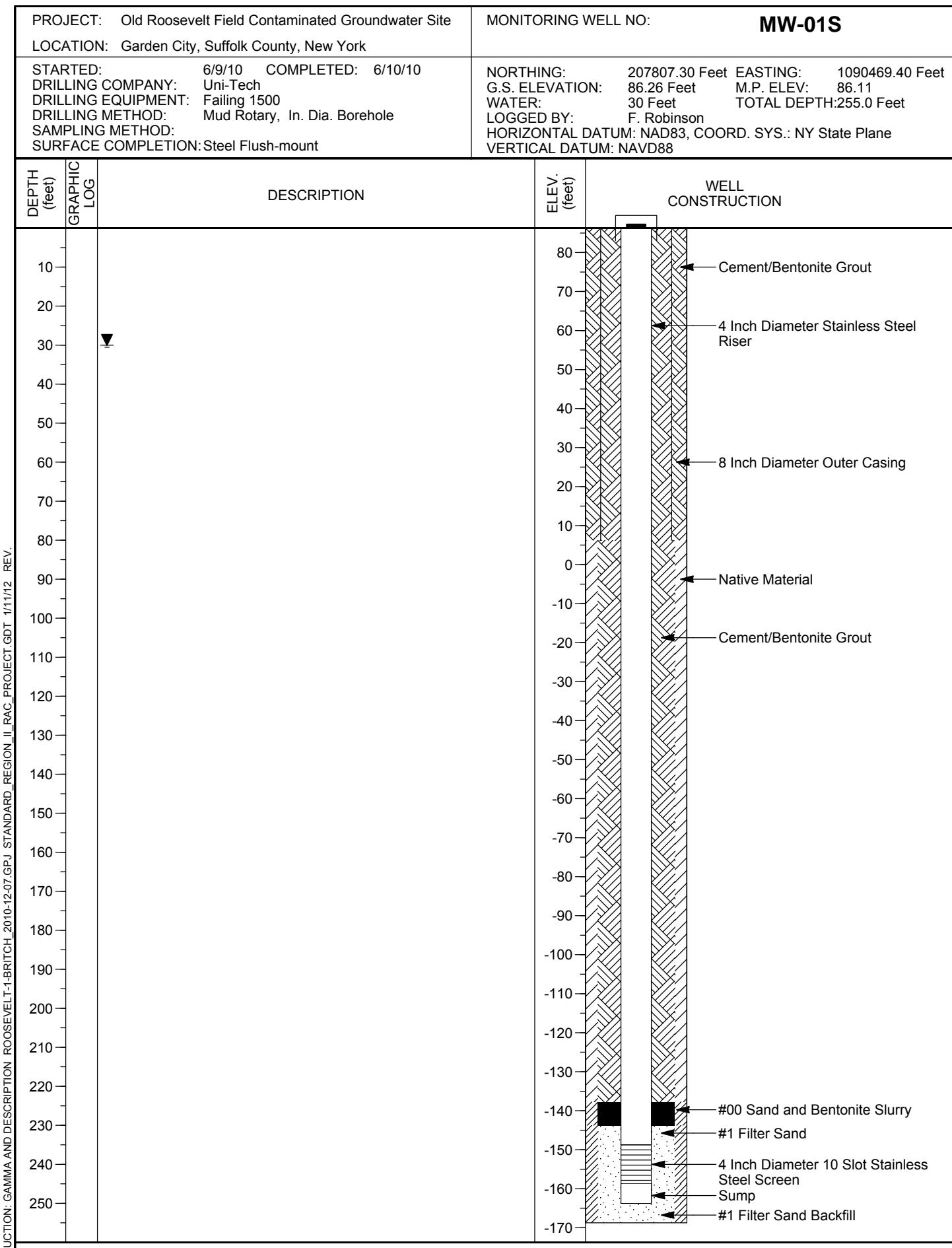
Fax: 732-225-7851

**CDM
Smith**

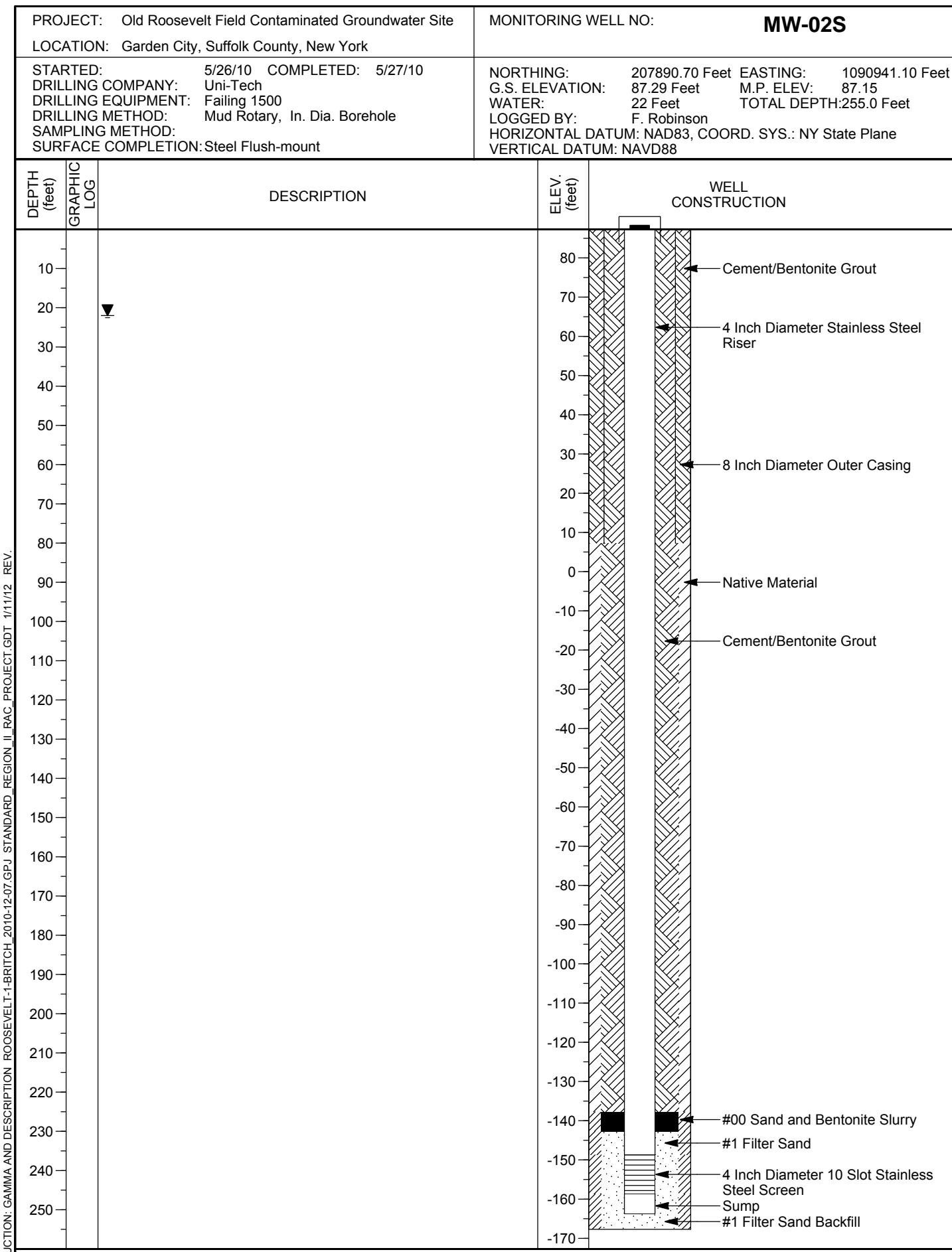
Monitoring Well
CONSTRUCTION LOG

PROJECT NO.

PAGE 1 OF 1



PROJECT: Old Roosevelt Field Contaminated Groundwater Site LOCATION: Garden City, Suffolk County, New York		MONITORING WELL NO: MW-02I	
STARTED: 6/1/10 COMPLETED: 6/3/10 DRILLING COMPANY: Uni-Tech DRILLING EQUIPMENT: Failing 1500 DRILLING METHOD: Mud Rotary, In. Dia. Borehole SAMPLING METHOD: SURFACE COMPLETION: Steel Flush-mount		NORTHING: 207903.40 Feet G.S. ELEVATION: 86.96 Feet WATER: 30 Feet LOGGED BY: F. Robinson HORIZONTAL DATUM: NAD83, COORD. SYS.: NY State Plane VERTICAL DATUM: NAVD88	EASTING: 1090927.90 Feet M.P. ELEV: 86.59 TOTAL DEPTH: 326.0 Feet
DEPTH (feet)	GRAPHIC LOG	DESCRIPTION	ELEV. (feet)
10			80
20			70
30	▼		60
40			50
50			40
60			30
70			20
80			10
90			0
100			-10
110			-20
120			-30
130			-40
140			-50
150			-60
160			-70
170			-80
180			-90
190			-100
200			-110
210			-120
220			-130
230			-140
240			-150
250			-160
260			-170
270			-180
280			-190
290			-200
300			-210
310			-220
320			-230
			-240
WELL CONSTRUCTION			
WELL CONSTRUCTION: GAMMA AND DESCRIPTION ROOSEVELT-1-BRITCH 2010-12-07 GPJ STANDARD REGION II RAC PROJECT GDT 1/11/12 REV.			
110 Fieldcrest Avenue Edison, New Jersey 6th Floor Telephone: 732-225-7000 Fax: 732-225-7851		PROJECT NO. CDM Smith	
		Monitoring Well CONSTRUCTION LOG	
PAGE 1 OF 1			



WELL CONSTRUCTION: GAMMA AND DESCRIPTION ROOSEVELT-1-BRITCH 2010-12-07 GPJ STANDARD REGION II RAC PROJECT GDT 1/11/12 REV.

110 Fieldcrest Avenue
Edison, New Jersey
6th Floor
Telephone: 732-225-7000
Fax: 732-225-7851

Monitoring Well
CONSTRUCTION LOG

PROJECT NO.

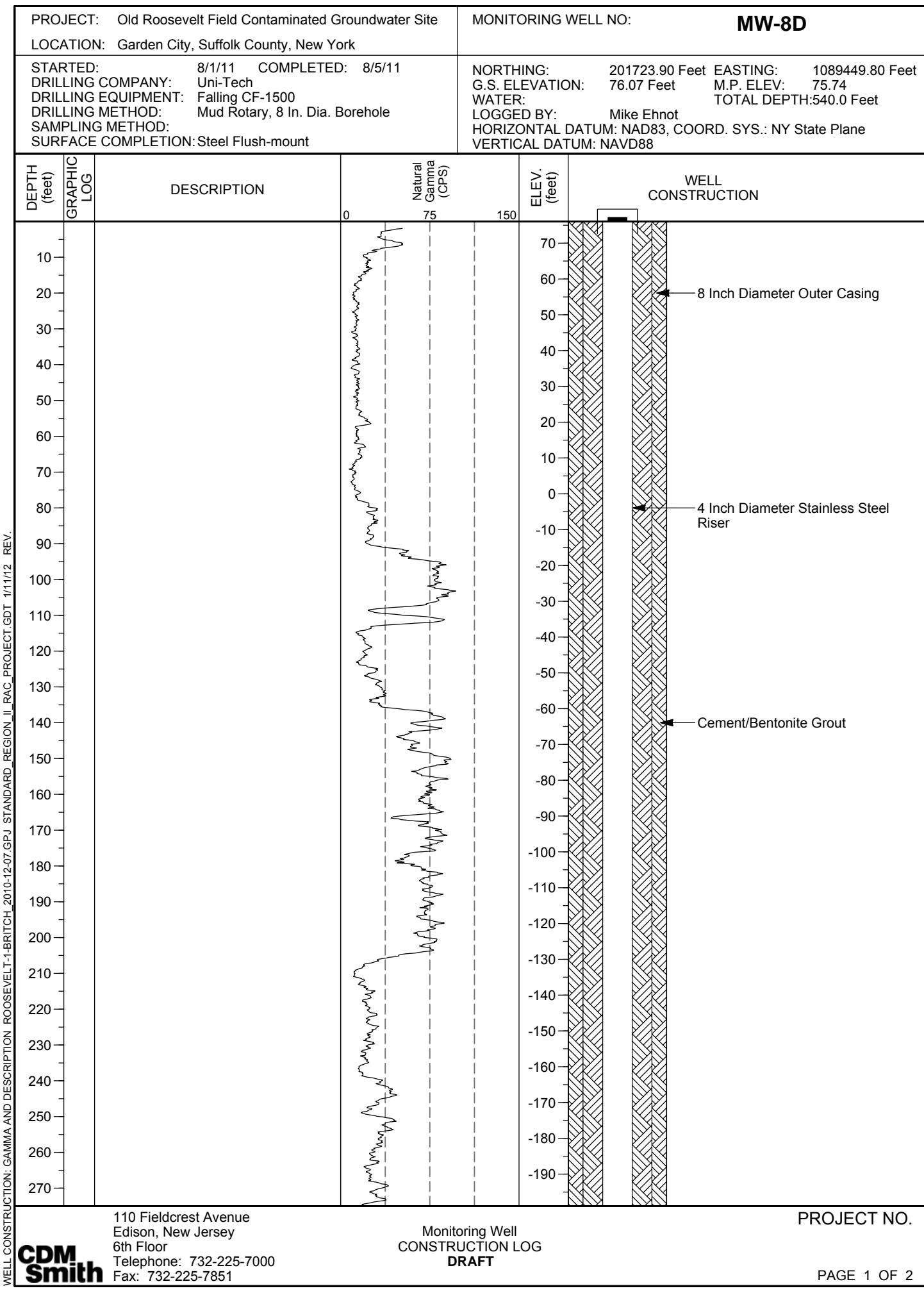
**CDM
Smith**

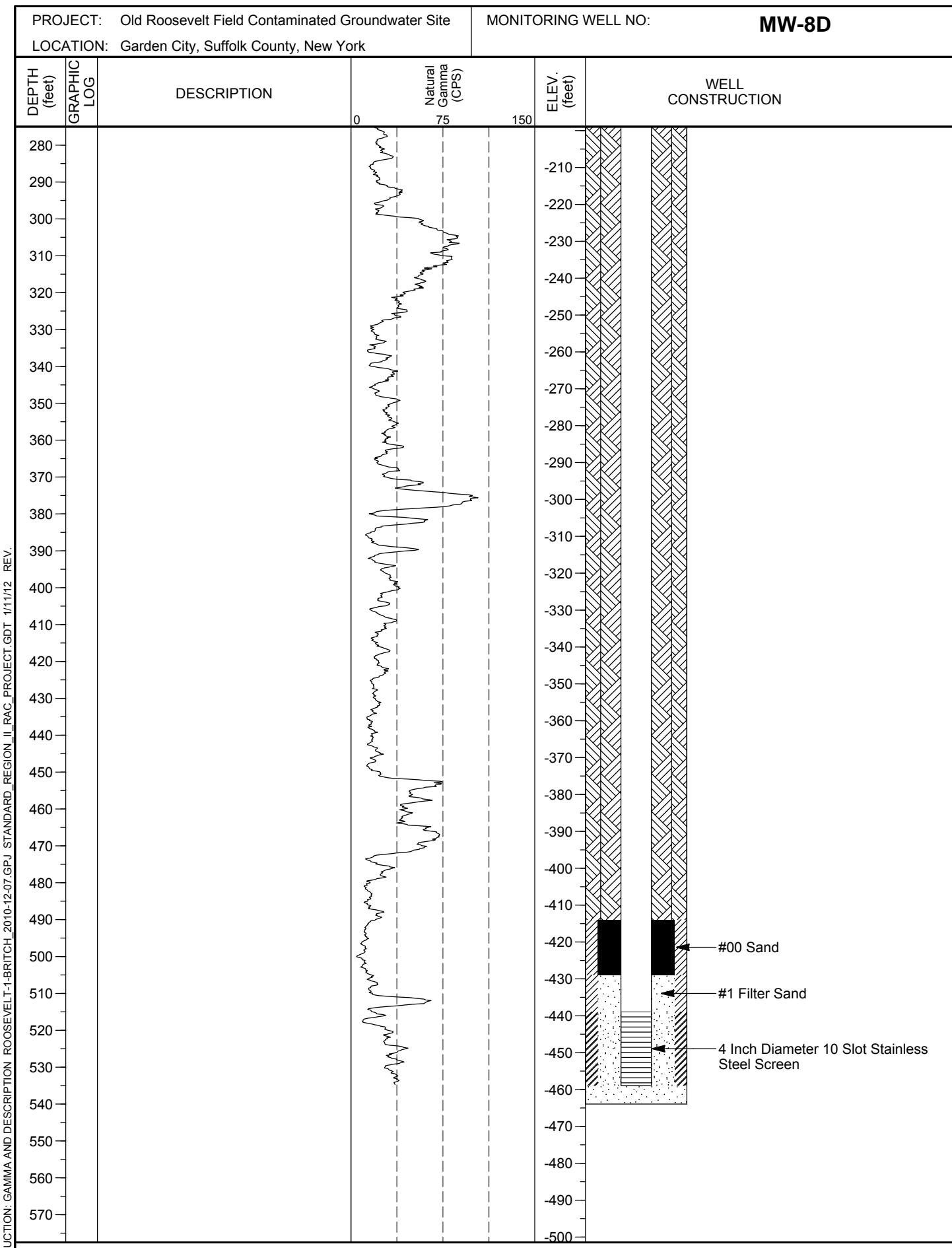
PAGE 1 OF 1

PROJECT: Old Roosevelt Field Contaminated Groundwater Site LOCATION: Garden City, Suffolk County, New York		MONITORING WELL NO: MW-03I	
STARTED: 5/19/10 COMPLETED: 5/21/10 DRILLING COMPANY: Uni-Tech DRILLING EQUIPMENT: Failing 1500 DRILLING METHOD: Mud Rotary, In. Dia. Borehole SAMPLING METHOD: SURFACE COMPLETION: Steel Flush-mount		NORTHING: 207025.70 Feet G.S. ELEVATION: 79.28 Feet WATER: 25 Feet LOGGED BY: F. Robinson HORIZONTAL DATUM: NAD83, COORD. SYS.: NY State Plane VERTICAL DATUM: NAVD88	EASTING: 1092104.20 Feet M.P. ELEV: 79.09 TOTAL DEPTH: 322.0 Feet
DEPTH (feet)	GRAPHIC LOG	DESCRIPTION	ELEV. (feet)
10			70
20	▼		60
30			50
40			40
50			30
60			20
70			10
80			0
90			-10
100			-20
110			-30
120			-40
130			-50
140			-60
150			-70
160			-80
170			-90
180			-100
190			-110
200			-120
210			-130
220			-140
230			-150
240			-160
250			-170
260			-180
270			-190
280			-200
290			-210
300			-220
310			-230
320			-240
WELL CONSTRUCTION		<p>The diagram illustrates the well construction. It shows a vertical borehole with two main sections. The left section is filled with hatched patterns representing native material and cement/bentonite grout. The right section is a vertical column with a central borehole. Labels indicate the following components from top to bottom: Cement/Bentonite Grout, 4 Inch Diameter Stainless Steel Riser, 8 Inch Diameter Outer Casing, Native Material, Cement/Bentonite Grout, #00 Sand and Bentonite Slurry, #1 Filter Sand, 4 Inch Diameter 10 Slot Stainless Steel Screen, Sump, and #1 Filter Sand Backfill.</p>	
WELL CONSTRUCTION: GAMMA AND DESCRIPTION ROOSEVELT-1-BRITCH 2010-12-07 GPJ STANDARD REGION II RAC PROJECT GDT 1/11/12 REV.			
110 Fieldcrest Avenue Edison, New Jersey 6th Floor Telephone: 732-225-7000 Fax: 732-225-7851		Monitoring Well CONSTRUCTION LOG	PROJECT NO.
CDM Smith			PAGE 1 OF 1

PROJECT: Old Roosevelt Field Contaminated Groundwater Site LOCATION: Garden City, Suffolk County, New York		MONITORING WELL NO: MW-03S	
STARTED: 5/17/10 COMPLETED: 5/18/10 DRILLING COMPANY: Uni-Tech DRILLING EQUIPMENT: Failing 1500 DRILLING METHOD: Mud Rotary, In. Dia. Borehole SAMPLING METHOD: SURFACE COMPLETION: Steel Flush-mount		NORTHING: 207019.30 Feet G.S. ELEVATION: 79.29 Feet WATER: 25 Feet LOGGED BY: F. Robinson HORIZONTAL DATUM: NAD83, COORD. SYS.: NY State Plane VERTICAL DATUM: NAVD88	EASTING: 1092089.90 Feet M.P. ELEV: 79.13 TOTAL DEPTH: 252.0 Feet
DEPTH (feet) GRAPHIC LOG	DESCRIPTION	ELEV. (feet)	WELL CONSTRUCTION
10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250		70 60 50 40 30 20 10 0 -10 -20 -30 -40 -50 -60 -70 -80 -90 -100 -110 -120 -130 -140 -150 -160 -170	<p>The diagram illustrates the well construction with the following components labeled from top to bottom:</p> <ul style="list-style-type: none"> Cement/Bentonite Grout 4 Inch Diameter Stainless Steel Riser 8 Inch Diameter Outer Casing Native Material Cement/Bentonite Grout #00 Sand and Bentonite Slurry #1 Filter Sand 4 Inch Diameter 10 Slot Stainless Steel Screen Sump #1 Filter Sand Backfill
WELL CONSTRUCTION: GAMMA AND DESCRIPTION ROOSEVELT-1-BRITCH 2010-12-07 GPJ STANDARD REGION II RAC PROJECT GDT 1/11/12 REV.			PROJECT NO.
CDM Smith 110 Fieldcrest Avenue Edison, New Jersey 6th Floor Telephone: 732-225-7000 Fax: 732-225-7851		Monitoring Well CONSTRUCTION LOG	PAGE 1 OF 1

PROJECT: Old Roosevelt Field Contaminated Groundwater Site LOCATION: Garden City, Suffolk County, New York	MONITORING WELL NO: MW-12S
STARTED: 8/16/11 COMPLETED: 8/17/11 DRILLING COMPANY: Uni-Tech DRILLING EQUIPMENT: Falling CF-1500 DRILLING METHOD: Mud Rotary, 13 In. Dia. Borehole SAMPLING METHOD: SURFACE COMPLETION: Steel Flush-mount	NORTHING: 204853.03 Feet EASTING: 1089715.40 Feet G.S. ELEVATION: 62.66 Feet M.P. ELEV: 62.28 WATER: TOTAL DEPTH: 114.0 Feet LOGGED BY: Mike Ehnot HORIZONTAL DATUM: NAD83, COORD. SYS.: NY State Plane VERTICAL DATUM: NAVD88
DEPTH (feet) GRAPHIC LOG	DESCRIPTION
10 20 30 40 50 60 70 80 90 100 110	<p>WELL CONSTRUCTION</p> <p>8 Inch Diameter Outer Casing</p> <p>4 Inch Diameter Stainless Steel Riser</p> <p>Cement/Bentonite Grout</p> <p>#00 Sand</p> <p>#1 Filter Sand</p> <p>4 Inch Diameter 10 Slot Stainless Steel Screen</p>
WELL CONSTRUCTION: GAMMA AND DESCRIPTION ROOSEVELT-1-BRITCH 2010-12-07 GPJ STANDARD REGION II RAC PROJECT GDT 1/11/12 REV.	
110 Fieldcrest Avenue Edison, New Jersey 6th Floor Telephone: 732-225-7000 Fax: 732-225-7851	Monitoring Well CONSTRUCTION LOG DRAFT
CDM Smith	PROJECT NO. PAGE 1 OF 1





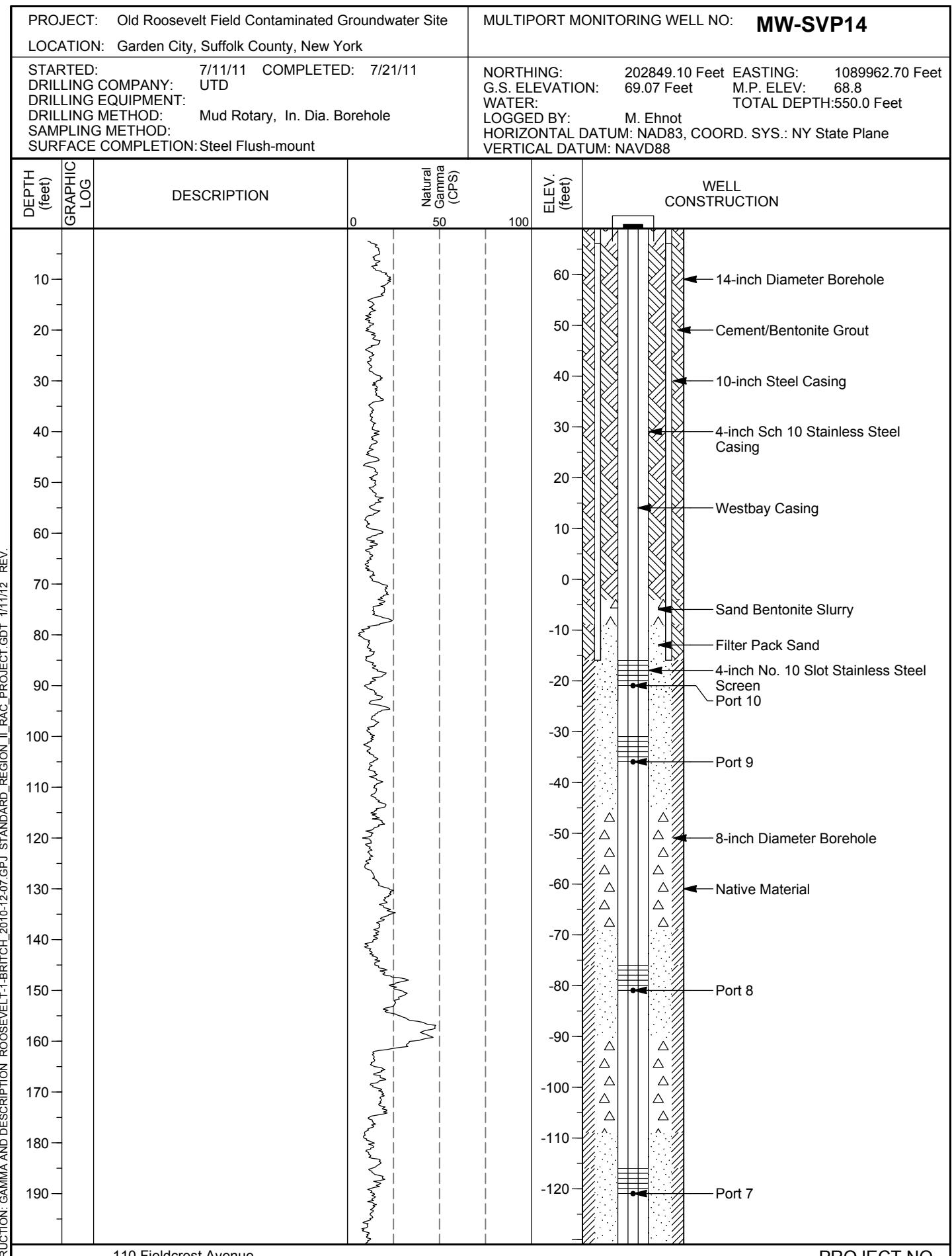
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Edison, New Jersey
6th Floor
Telephone: 732-225-7000
Fax: 732-225-7851

Monitoring Well
CONSTRUCTION LOG
DRAFT

PROJECT NO.

**CDM
Smith**

PAGE 2 OF 2



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Edison, New Jersey

6th Floor

Telephone: 732-225-7000

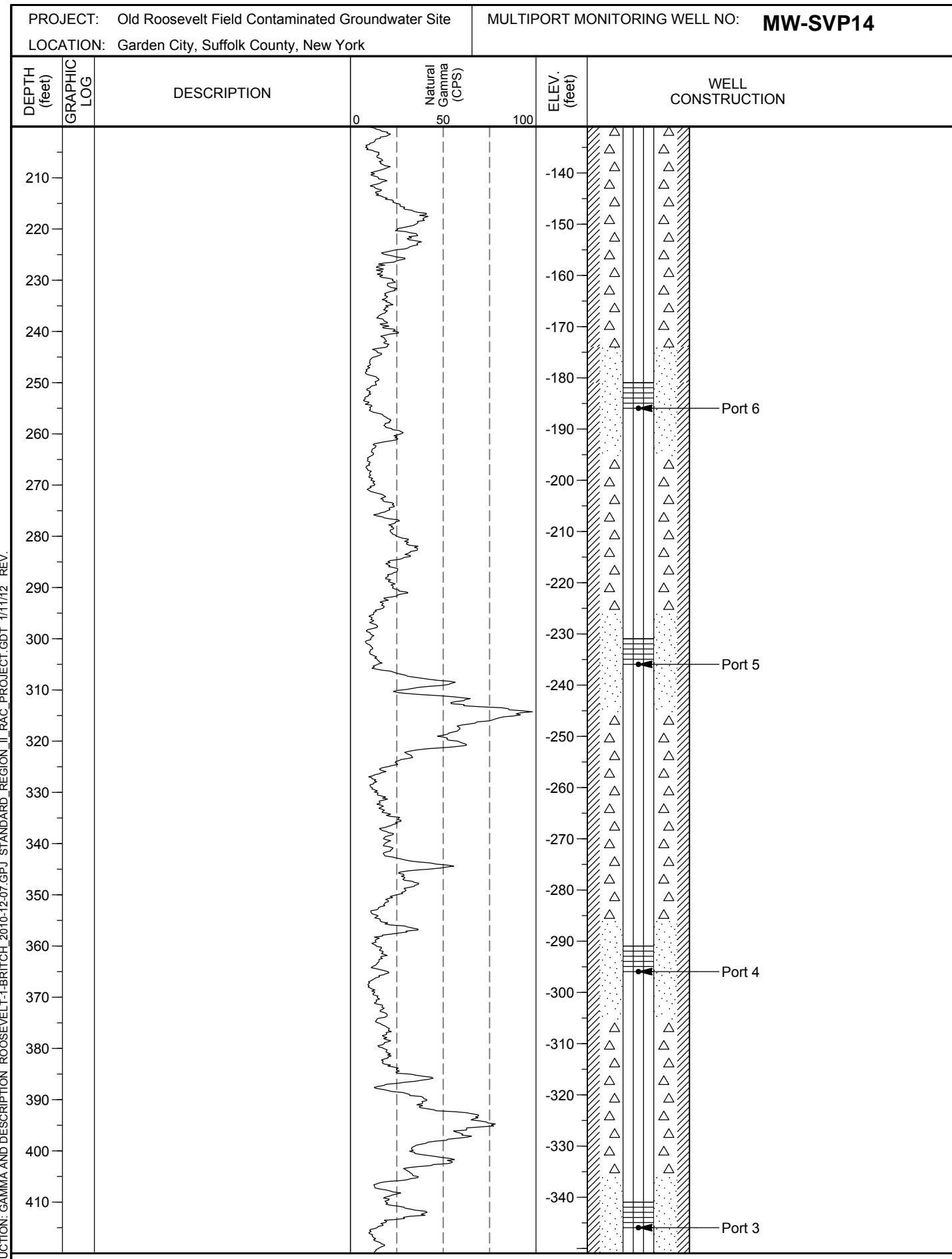
Fax: 732-225-7851

MULTIPOINT MONITORING WELL
CONSTRUCTION LOG
DRAFT

PROJECT NO.

**CDM
Smith**

PAGE 1 OF 3



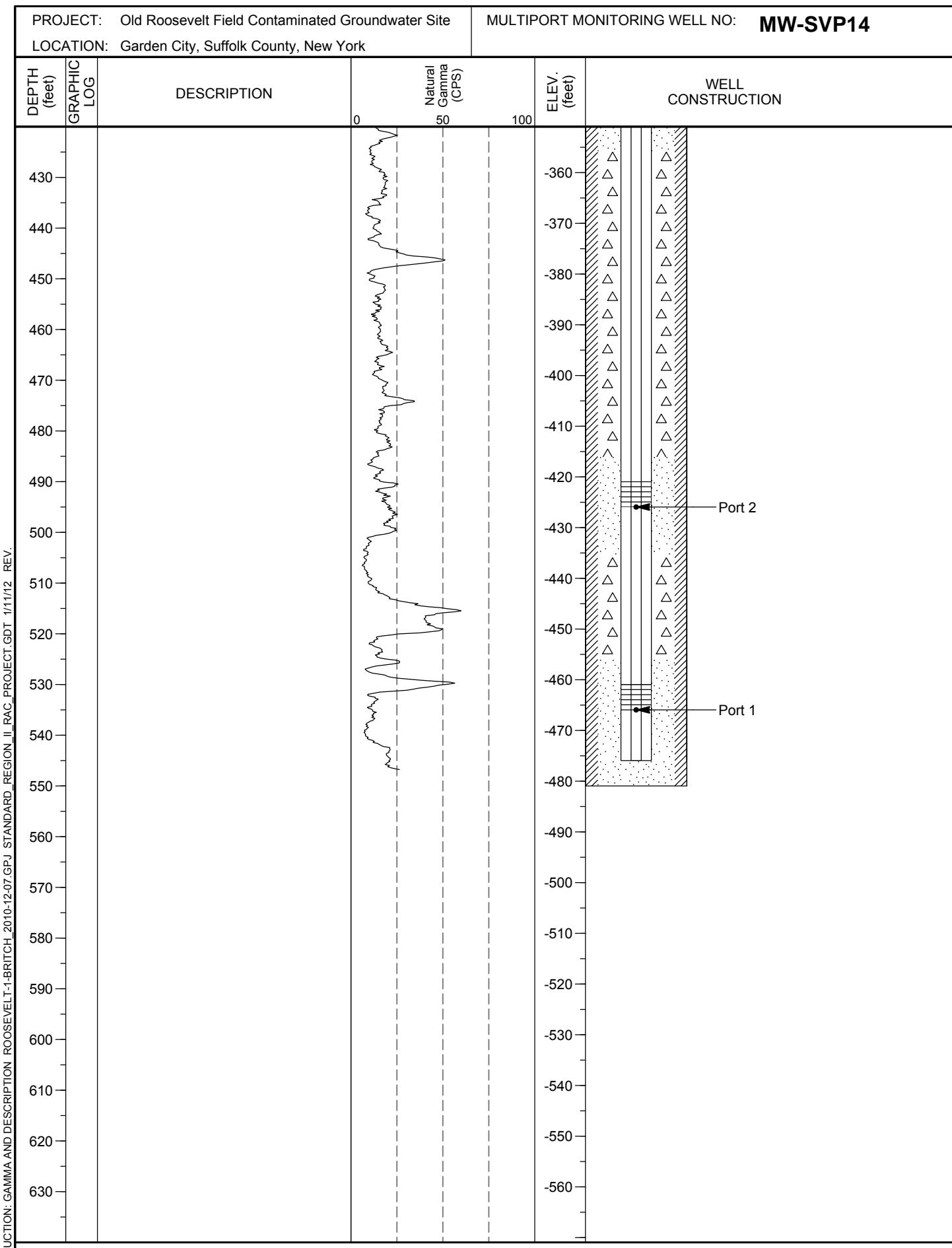
110 Fieldcrest Avenue
Edison, New Jersey
6th Floor
Telephone: 732-225-7000
Fax: 732-225-7851

MULTIPORT MONITORING WELL
CONSTRUCTION LOG
DRAFT

PROJECT NO.

**CDM
Smith**

PAGE 2 OF 3



Appendix C

Well Development Records

KODAK TENS

West Bay Well Site Project
WHITE CHEMICAL SUPERFUND SITE, OU3
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: AUGUST 25, 2011

SAMPLERS: HDE

WEATHER CONDITIONS: Drawn WG

SAMPLE ID: N/A
CLP ID: N/A

WELL #: SP-14 BGS /

DEPTH OF PUMP INTAKE: ft TIC or ft BGS (circle one)

SCREENED/OPEN BOREHOLE INTERVAL: 530'-533' ft TIC or ft BGS (circle one)

SAMPLE TIME: N/A SAMPLE FLOW RATE: N/A ml/minute

Instrument Type/Model: Complete and/or Circle at right		YSI Model # 550 / Horiba U-22 (circle one)		Instrument: Celite						
CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN	pH	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one)	Units:	ft TIC / ft BGS (circle one)	SU	S/cm (mS/cm) or µS/cm (circle one)	mg/L (not %)	Units: °C	Units: mV	NTUs
1330	Began Pumping 1 in Hole of Water Well									
1500	Purges 20 Casing 1 in	16 hrs	6.33	0.401	1.76	21.2	164.0	29.8		
1520	Purges 25 Casing 1 in	30 hrs.	6.39	0.395	1.79	20.44	196.7	23.5		
1530										
1533										
1536										
1538										

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values:
DO = 0.3 - 10 mg/L
Spec. Conductivity (μ S/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 μ S/cm = 1 mS/cm

TIC = Top of Inner Casing

BGS = Below Ground Surface

Rosenthal Field
Westby Well Development
WHITE CHEMICAL SUPERFUND SITE, OU3

LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: AUGUST 25 2011

SAMPLERS:

WEATHER CONDITIONS: Sunny & Hot

SAMPLE ID: N/A
CLP ID:

WELL #: 502 14 Foot 2
DEPTH OF PUMP INTAKE: 14' ft DO or ft BGS (circle one)
SCREENED/OPEN BOREHOLE INTERVAL: 4' to 14' ft TIC or ft BGS (circle one)

SAMPLE TIME: N/A SAMPLE FLOW RATE: N/A ml/minute

Instrument Type/Model: Complete and/or Circle at right		YSI Model # 536 / Horiba U-22		(circle one)		Instrument: do				
CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN	pH	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP.	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one)	Units: ft TIC / ft BGS (circle one)	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm° or µS/cm (circle one)	mg/L <u>not %</u>	Units: °C	mV	NTUs
1103	Below 4' Range	14' Foot 2	N/A	14' Foot 2	N/A	N/A	N/A	N/A	N/A	N/A
1120	100000	5' Casing In 14' Well								
1137	100000	10' Casing in 34' Well								
1151	100000	15' Casing in 31' Well								
1203					6.13	0.371	1.11	20.68	187.7	7.98
1221	100000	25' Casing in 14' Well								
1233					6.18	0.363	1.32	21.66	194.9	17.2
1303					6.16	0.365	1.30	19.88	193.6	20.8
1304	100000	35' Casing in 24' Well	6.01	0.367	1.33	19.57	199.1	24.9		
1309	50000	Inner Casing 36' Casing	5.26	0.366	1.34	1.32	193.7	22.9		

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Spec. Conductivity ($\mu\text{S}/\text{cm}$) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 $\mu\text{S}/\text{cm}$ = 1 mS/cm

TIC = Top of Inner Casing

BGS = Below Ground Surface

Roosevelt Field
Westbase White Chemical Superfund Site, OU3

LOW FLOW GROUNDWATER SAMPLING-PURGE RECORD

DATE: AUGUST 25, 2011

SAMPLERS: NSE

WEATHER CONDITIONS: Survey of hot

SAMPLE ID: NA
CLP ID:

WELL #: SWP-14 Sheet 3

DEPTH OF PUMP INTAKE: ~~Water~~ ft TIC or ft BGS (circle one)

SCREENED/OPEN BOREHOLE INTERVAL: 410'-445' ft TIC or ft BGS (circle one)

SAMPLE TIME: 1/2 SAMPLE FLOW RATE: 1/2 ml/minute

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)	Instrument: YSI 6400e
Instrument Type/Model: Complete and/or Circle at right											
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one)	Units:	ft TIC / ft BGS (circle one)	SU	S/cm, μ S/cm ² or μ S/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs	
000	Below Pump Intake	3 ft Water	1/2 ft								
003	Purges	5 Cans of 25 ml/s									
050	0.0000	10 Cans									
055	0.0000	15 Cans									
060	0.0000	20 Cans									
065	0.0000	25 Cans									
070	0.0000	30 Cans									
075	0.0000	35 Cans									
100 ^t	0.0000	30 Cans	1 HK 59 min.		6.16	0.368	2.18	24.20	191.7	12.7	
101 ^d	0.0000	30 Cans			6.05	0.372	1.09	21.50	188.4	13.9	
101 ^r	0.0000	30 Cans			5.97	0.372	1.18	20.70	184.4	14.9	
102 ^t	0.0000	30 Cans			6.01	0.366	1.15	20.65	191.3	15.0	
105	0.0000	30 Cans			6.04	0.364	1.09	20.61	192.6	14.2	

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis. Typical values: DO = 0.3 - 10 mg/L Spec. Conductivity (μ S/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 μ S/cm = 1 mS/cm

Turbidity = 0 - >500 NTUs

BGS = Below Ground Surface

TIC = Top of Inner Casing

ROSENBLIT FIELD

Westby Wewa Development WHITE CHEMICAL-SUPERFUND SITE, QU3

LOW-FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: AUGUST 24, 2011

SAMPLERS: NOE

WEATHER CONDITIONS: Sunny & Hot

SAMPLE ID: No
CLP ID:

WELL #: SW-14 Port 4

DEPTH OF PUMP INTAKE: ~~10' TGS~~ ft TIC or ft BGS (circle one)

SCREENED/OPEN BOREHOLE INTERVAL: 360'-365' ft TIC or ft BGS (circle one)

SAMPLE TIME: 1/2 SAMPLE FLOW RATE: 1/2 ml/minute

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)	Instrument: <i>YSI</i>
											Other (specify)
14:21	11.666	10' TGS	1/2	ft TIC / ft BGS (circle one)	7.4	1000	mg/L (not %)	mV	NTUs		
14:42	13.000	10' TGS to 21' TGS	1/2	ft TIC / ft BGS (circle one)	7.4	1000	mg/L (not %)	mV	NTUs		
15:00	14.333	10' TGS to 39' TGS	1/2	ft TIC / ft BGS (circle one)	7.4	1000	mg/L (not %)	mV	NTUs		
15:20	15.666	15' TGS to 59' TGS	1/2	ft TIC / ft BGS (circle one)	5.91	0.529	5.27	21.36	280.1	3.34	
15:37	17.000	20' TGS to 14' TGS	1/2	ft TIC / ft BGS (circle one)	5.39	0.527	5.08	19.60	260.4	4.77	
15:54	18.333	25' TGS to 14' TGS	1/2	ft TIC / ft BGS (circle one)	6.19	0.543	3.66	19.99	272.7	16.0	
16:11	19.666	30' TGS to 14' TGS	1/2	ft TIC / ft BGS (circle one)	6.15	0.571	2.69	19.05	231.6	30.3	
16:20	21.000	30' TGS to 14' TGS	1/2	ft TIC / ft BGS (circle one)	5.60	0.501	2.36	18.93	261.2	29.2	
16:22	21.333	30' TGS to 14' TGS	1/2	ft TIC / ft BGS (circle one)	5.48	0.497	2.17	18.90	252.4	26.3	
16:25	21.666	30' TGS to 14' TGS	1/2	ft TIC / ft BGS (circle one)	5.69	0.497	1.96	18.07	232.1	34.0	

16:27 *Drop Casing After 1000 ml of water + Redukt 500 ml*
Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 250 ml/min during sampling. Readings should be taken every three to five minutes.

The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values:

TIC = Top of Inner Casing

BGS = Below Ground Surface

DO = 0.3 - 10 mg/L

Spec. Conductivity ($\mu\text{S}/\text{cm}$) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 $\mu\text{S}/\text{cm}$ = 1 mS/cm

NOTE: Open Close TDL stuck in May 10/45 - 14/5

Roosevelt Area
West Bay Well Development

WHITE CHEMICAL-SUPERFUND SITE, OU3
LOW-FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: AUGUST 24, 2011

SAMPLERS: N/A

WEATHER CONDITIONS: Sunny at hot

SAMPLE ID: N/A
CLP ID:

WELL #: SW-14 West

DEPTH OF PUMP INTAKE: ~~W/TIC ft~~ ~~N/C or ft BGS~~ (circle one)

SCREENED/OPEN BOREHOLE INTERVAL: 300'-305' ft ~~TIC or ft BGS~~ (circle one)

SAMPLE TIME: N/A SAMPLE FLOW RATE: N/A ml/minute

CURRENT TIME	VOLUME PURGED	Instrument Type/Model: Complete and/or Circle at right		YSI Model # 556 / Horiba U-22 Other (specify)	(circle one)	Instrument: L/T/C or BGS							
		DEPTH TO WATER	FLOW RATE				DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one)	Units: ft TIC / ft BGS (circle one)	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm or µS/cm (circle one)				mg/L (not %)	Units: °C	mV	NTUs
8/26	Beach Pycnus at Waterline	Hydroline Prof											
8/26	Purges S Casing to 25 ft w.s.												
8/26	Purges N/C Casing to 47 ft w.s.												
8/26	Purges N/C Casing to 59 ft w.s.												
8/26	Purges N/C Casing to 110 ft w.s.												
8/26	Purges N/C Casing to 30 ft w.s.												
8/27	Top Casing to 110 ft w.s.												
8/27	Top Casing to 30 ft w.s.												
10/15	Top Casing to 30 ft w.s.												
10/19													
10/20													
10/20	Top Casing to 242 ft w.s.												

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis. Typical values: DO = 0.3 - 10 mg/L Spec. Conductivity (μ S/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 μ S/cm = 1 mS/cm

TIC = Top of Inner Casing

BGS = Below Ground Surface

Roosevelt Trees
West Bay Well Sampling Test
 WHITE CHEMICAL SUPERFUND SITE, OU3
 LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: AUGUST 23, 2001

SAMPLERS: *bdc*

WEATHER CONDITIONS: *Sunny & hot*

SAMPLE ID: *M*
 CLP ID: *M*

WELL #: SW-14 Plot 6

DEPTH OF PUMP INTAKE: *WTR* ft TIC or ft BGS (circle one)

SCREENED/OPEN BOREHOLE INTERVAL: *SW-2551* ft TIC or ft BGS (circle one)

SAMPLE TIME: *M* SAMPLE FLOW RATE: *M* ml/minute

Instrument Type/Model: Complete and/or Circle at right		YSI Model # <i>552</i> / Horiba U-22		(circle one)		Instrument: <i>LAR</i>				
CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one)	Units: ft TIC / ft BGS (circle one)	SU	S/cm, $\mu\text{S}/\text{cm}^2$ or $\mu\text{S}/\text{cm}$ (circle one)	mg/L <u>(not %)</u>	Units: °C	mV	NTUs	
13:04	Began Purge W/ White Hydrait Pump									
13:25	Purges 5 Gals in 17 min									
13:56	Expended "Pump" to longer purge									
14:02	Purges 15 Gals in 54 min.									
14:16					6.64	0.574	5.32	20.21	26.8	5.13
14:20	Purges 25 Gals in 1 HR 20 min.				6.42	0.541	5.71	19.29	215.3	2.57
14:31					6.36	0.534	5.89	19.01	226.1	2.00
14:34					6.29	0.528	6.24	16.89	206.8	2.98
14:37					6.25	0.521	6.06	19.14	213.8	1.84
14:40	Stop/End Purging when pump ~27 GPM									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis. Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Spec. Conductivity ($\mu\text{S}/\text{cm}$) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 $\mu\text{S}/\text{cm}$ = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Rosevelt Field
Westbury New York
WHITE CHEMICAL SUPERFUND SITE, OUT
LOW-FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: AUGUST 23, 2014

SAMPLERS: NSR

WEATHER CONDITIONS: Sunny & Hot

SAMPLE ID: N/A
CLP ID:

WELL #: SW-14 Port 7

DEPTH OF PUMP INTAKE: ~~100 ft TIC or ft BGS~~ (circle one)

SCREENED/OPEN BOREHOLE INTERVAL: 185' - 190' ft TIC or ft BGS
(circle one)

SAMPLE TIME: N/A SAMPLE FLOW RATE: Not ml/minute

Instrument Type/Model: Complete and/or Circle at right		YSI Model # <u>552</u> / Horiba U-22		(circle one)		Instrument: <u>Horiba</u>				
CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one)	Units:	ft TIC / ft BGS (circle one)	SU	S/cm, μ S/cm ³ or μ S/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
10:54	Below Pumping Point	Hydrogen Peroxide								
11:10	Purges 5 Casing in 16 mins									
11:25										
11:44	Purges 15 Casing in 50 mins									
11:50										
12:01	Purges 20 Casing in 160 mins									
12:17	Purges 20 Casing in 160 mins									
12:33	Purges 30 Casing in 110 mins									
12:33										
12:38										
12:40	SDI 1000 Purge 160 mins ~ 32.344									

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values:
DO = 0.3 - 10 mg/L
Spec. Conductivity (μ S/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 μ S/cm = 1 mS/cm

TIC = Top of Inner Casing

BGS = Below Ground Surface

Turbidity = 0 - >500 NTUs

Rossetti Field
West Bay Well Development
WHITE CHEMICAL SUPERFUND SITE, OU3

LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: AUGUST 23, 2011

SAMPLERS: MTH

WEATHER CONDITIONS: Sunny & Hot

SAMPLE ID: NA
CLP ID:

WELL #: JVP-14 Port 8

DEPTH OF PUMP INTAKE: ~~Water~~ ft TIC or ft BGS (circle one)
SCREENED/OPEN BOREHOLE INTERVAL: 145' - 150' ft TIC or ft BGS (circle one)

SAMPLE TIME: NA SAMPLE FLOW RATE: NA ml/minute

Instrument Type/Model: Complete and/or Circle at right		YSI Model # <u>82</u> / Horiba U-22 (circle one)		Instrument: <u>82</u>						
CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one)	Units: SU	ft TIC / ft BGS (circle one)	S/cm, $\mu\text{S}/\text{cm}^{\circ}$ or $\mu\text{S}/\text{cm}$ (circle one)	mg/L (not %)	Units: °C	mV	NTUs	
8:35	Below Pumping Point via Hydromat Pump									
8:40	Purged Casing									
8:50										
9:00	Purged 17 Casing in 25 min.									
9:05										
9:15	Purged 15 Casing in 40 min.									
9:32	Purges 20 Casing in 57 min.	6.7 ft	828 ml/min.	7.75	0.570	5.50	16.92	19.2	8	46.1
9:58	Purges 25 Casing in 15 min.	6.7 ft	831 ml/min.	7.73	0.573	5.50	19.04	19.2		
10:06	Purges 30 Casing in 16 min.	6.3 ft	834 ml/min.	7.76	0.576	5.52	19.2	20.6	4	25.5

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values: DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Spec. Conductivity ($\mu\text{S}/\text{cm}$) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 $\mu\text{S}/\text{cm}$ = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

8/23/11 106 2

**WHITE CHEMICAL SUPERFUND SITE, OU3
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD**

DATE: AUGUST 23, 2011
SAMPLERS: Hoss
WEATHER CONDITIONS: Very Hot
SAMPLE ID: N/A
CLP ID:

SAMPLERS:

WEATHER CONDITIONS.

Very short

IF ELIGIBLE **ONE** **TWO** **THREE** **FOUR** **FIVE** **SIX** **SEVEN** **EIGHT** **NINE** **TEN** **ELLEVEN** **TWELVE** **THIRTEEN** **FOURTEEN** **FIFTEEN** **SIXTEEN** **SEVENTEEN** **ELVAN** **ELVAN** **ELVAN** **(circle one)**

SAMPLE ID: 111 SAMPLE TIME: 11:17 SAMPLE FLOW RATE: 100 ml/minute

DEPTH OF PUMP INTAKE: 10 ft TIC or ft BGS (circle one)

one) **TIC or fit BGS**
(circle one)

one)

SCREENED/OPEN BOREHOLE INTERVAL: 145' - 150' (ft T.D.)

FLOW RATE: *N/A* ml/minute

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Turbidity = 0 - >500 NTU
Redox Potential = -100 - +600 mV
DO = 0.3 - 10 mg/L
Soil Concentration = 0.04 - 100 mg/L

2 ac 2
2 ac 2
1 mS/cm

BGS = Below Ground Surface

TIC = Top of Inner Casting

Roosevelt Field
 West Bay Well Network
 WHITE CHEMICAL SUPERFUND SITE, QU3
 LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: AUGUST 22 2011

SAMPLERS: MPR

WEATHER CONDITIONS: Sunny at 80°

SAMPLE ID: N/A
CLP ID: N/A

WELL #: SW-14 Port 9

DEPTH OF PUMP INTAKE: ~~at well~~ ft TIC or ft BGS (circle one)
 SCREENED/OPEN BOREHOLE INTERVAL: 100' - 105' ft TIC or ft BGS (circle one)

SAMPLE TIME: ~~at~~ SAMPLE FLOW RATE: N/A ml/minute

Instrument Type/Model: Complete and/or Circle at right		YSI Model # _____ / Horiba U-22 (circle one)				Instrument:				
CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one)	Units: SU	ft TIC / ft BGS (circle one)	S/cm, mS/cm ³ or µS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs	
1350										
1405										
1435										
1500	PURGED 15 GALS IN 55 mins.									
1515	PURGED 20 GALS IN 1 HR 13 min.									
1530										
1545										
1555										
1600										

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis. Typical values: DO = 0.3 - 10 mg/L Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

ROOSEVELT FED

**WHITE CHEMICAL SUPERFUND SITE, OU3
FLOW GROUNDWATER SAMPLING PURGE RECORD**

WELL #: 59P-14 Post 10
WELL NAME:

SAMPLERS:

2011

W.M.

DEPTH OF PUMP INTAKE: ~~What's the ft TIC or ft BGS~~ (circle one)

Survey of Art

SCREENED/OPEN BOREHOLE INTERVAL: 85'-90' ft TIC (circle)

SAMPLE ID:
C1P1D.

SCREENED/OPEN BOREHOLE INTERV
SAMPLE TIME: 1/14 SAMPLE FLOW RATE: 111 ml/minute

Instrument Type/Model: Complete and/or Circle at right		YSI Model # <u>532</u>		/ Horiba U-22 (circle one)		Instrument: <u>Lake</u>				
CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN	pH	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one)	Units:	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm ² or μS/cm (circle one)	mg/L (not %)	Units: °C	mV	NTUs
10:00	Below Moring Point	10 (5-70)	Not	14.700	Hydrogen					
11:00	5 Cuts in 2D run.									
11:10	10 Cuts in 3D run.									
11:17	0.786	2.94	26.79	103.0	44.6					
11:35	15 cuts in 55 min.									
12:10	0.809	3.23	20.44	72.2	49.8					
12:40	0.753	4.74	20.16	72.9	19.0					
12:50	0.732	4.57	19.97	63.5	2.84					
13:00	0.732	4.67	19.30	69.3	8.37					
13:00	0.729	5.04	19.15	65.3	7.54					

1/30 4.74 10.87 0.730 4.74 16.99 41.85
Sediment Analysis after Meltin ~ 36 hrs
Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis

Turbidity = 0 - >500 NTU
Redox Potential = -100 - +600 mV

water. Note: 1,000 $\mu\text{S}/\text{cm} = 1 \text{ mS}/\text{cm}$

TIC = Top of Inner Casing
D NOT TALL
BGS = Below Ground Surface
RIGHT Hand

Appendix D

Westbay Field Construction Records



Completion Report

Westbay Monitoring Well: SVP-14
Old Roosevelt Field Superfund Site
Garden City, NY
September 1, 2011

Prepared for:

Uni-Tech Drilling Co., Inc.
61 Grays Ferry Rd, P.O. Box 407
Franklinville, NJ 08322

Prepared by:

Earth Data Northeast, Inc.
Whiteland Technology Center
924 Springdale Drive
Exton, PA 19341

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2. Installation.....	3
2.1 Preparation of Monitoring Well Design	3
2.2 Layout of MP Casing Components.....	3
2.3 Lowering of MP Components.....	4
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2.5 Positioning of MP Components	4
2.6 Pre-inflation Profile	5
2.7 Inflation of MP System Packers	5
3. Fluid Pressure Measurements	5

1. Introduction

This report details the onsite technical services performed by Earth Data Northeast, Inc. (EDN) for Uni-Tech Drilling Co., Inc. (Uni-Tech) under EDN Proposal No. P-8737r1. A Westbay System multiport monitoring well was installed in borehole SVP-14 at the Old Roosevelt Field Superfund Site in Garden City, NY.

EDN installation technician George Seidman was onsite to perform the installation on August 10-12, 2011. Karl Hitzelberger and Eugene Blemings of Uni-Tech and Mike Ehnot of CDM assisted during the installation. This report documents the installation tasks and related QA checks.

2. Installation

The monitoring well was installed as indicated below. All depths are recorded in feet below ground surface (bgs).

Table 1. Summary of MP Well Installation

Monitoring Well No.	Installation Date	Borehole Depth (ft bgs)	MP38 Casing Depth (ft bgs)	No. Monitoring Zones
SVP-14	August 10-12, 2011	545.0	545.0	10

2.1 Preparation of Monitoring Well Design

A preliminary well design was constructed by Schlumberger Water Services (SWS), based on target monitoring zones requested by Uni-Tech, on January 27, 2010. The well design was revised by SWS as requested by Uni-Tech, and the final design was prepared on July 21, 2011. A casing installation log was produced from the final well design, and was reviewed and approved in the field by Uni-Tech prior to the installation of the well. Copies of the well design and installation log are in the Appendices.

Each isolated interval contained an MP measurement port which can be used to collect fluid pressures and groundwater samples. Each primary monitoring zone also contained an MP pumping port which can be used for purging and hydraulic conductivity testing.

2.2 Layout of MP Casing Components

Prior to the installation, the Westbay System casing components were laid out near the wellhead of the borehole in the order in which they were to be installed, indicated on the approved installation log. Each casing component was numbered in order, beginning with the deepest components and continuing to the shallowest. Once numbered, each component received the

proper Westbay System coupling as indicated on the installation log. Magnetic Locating Collars were attached to casing components in the primary monitoring zones, two feet below the zones respective MP measurement port.

Each casing component was visually inspected for any damage or defect prior to installation. Serial numbers for each MP packer, MP pumping port and MP measurement port couplings were recorded on the Casing Installation Log. Each well component and attached coupling was confirmed with the log prior to being lowered into the well.

2.3 Lowering of MP Components

The static water level of the borehole was approximately 22.40 feet at the time of installation allowing the MP system to be lowered by hand. As the components were joined each casing joint was tested with a minimum internal hydraulic pressure of 150 psi for 1 minute to confirm hydraulic seals. Check marks on the casing installation log provide a record of the joint testing.

2.4 Hydraulic Integrity Testing

After the MP casing was lowered into in the borehole and prior to packer inflation, the water level inside the MP casing was monitored to confirm the hydraulic integrity of the casing. The water level inside the casing was monitored for a period of 30 minutes and observed for changes. The static water level in the borehole was approximately 22.40 feet below the top of the well casing, and the water level inside the MP casing was 224.31 feet, so any leaks would result in an increase in water level inside the MP casing. The integrity tests indicated that the MP System was water tight prior to packer inflation. Integrity tests for the borehole can be seen in Table 2.

Table 2. Integrity Test Results

Borehole	Depth to Water (ft) Start	Depth to Water (ft) End	Change (ft)
SVP-14	224.31	224.31	+0.00

2.5 Positioning of MP Components

After the components were lowered in to the well the Westbay casing string was positioned as shown on the Casing Installation Log. The Westbay casing string was supported in this position while packer inflation was carried out. The positioning of the Westbay casing components is based on the “nominal” lengths of Westbay casing components. The positioning calculations do not include allowances for borehole temperature or deviation effects, which are site dependant. The attached figure titled “MOSDAX Transducer Position” provides information to correlate the position of MOSDAX Transducer sensors to the reference position at the top of the Measurement Port. The attached figure titled “Dimensions of Packer Seals and Monitoring Zones” outlines the calculations used to determine the packer centerline depths and zone lengths.

2.6 Pre-inflation Profile

Prior to inflating the packers in each well, a pressure profile was performed. The goal of the pressure profile was to confirm the proper operation and location of the measurement ports and magnetic collars.

2.7 Inflation of MP System Packers

The MP packers were inflated sequentially beginning at the bottom of the well using clean water provided by Earth Data. Schlumberger's model No. 6055 vented inflation tool was used for packer inflation. The data for inflation of each packer are provided on the MP Packer Inflation Records included in the Appendices.

3. Fluid Pressure Measurements

Following inflation of the packers, a post-inflation pressure profile was completed. At the time the measurements were taken, the isolated intervals may not have reached their final equilibrated fluid pressure levels. Longer term monitoring may be required to establish representative fluid pressures.

A plot of the Pre-Inflation Piezometric levels in all zones in the well is shown on Figure 1 in the Appendices. A plot of the Post –Inflation Piezometric levels is shown in Figure 2. The data was reviewed to confirm proper operation of the measurement ports and check the presence of the annulus seals between monitoring zones.

Table 3. Depths of Key Items for MP Monitoring Well SVP-14

Zone No.	Nominal Monitoring Interval * (ft)	MP Casing No. (from MP Log)	Packer No.	Packer Serial No.	Nominal Packer Position *** (ft)	Measurement Port Depth ** (ft)	Magnetic Collar Depth ** (ft)	Pumping Port Depth ** (ft)
1	525.0-TD	1-3	-	-	-	530.0	532.0	535.0
-	-	4	1	17320	520.0	-	-	-
2	515.0-520.0	5	-	-	-	515.0	-	-
-	-	6	2	17319	510.0	-	-	-
3	500.0-510.0	7	-	-	-	500.0	-	-
-	-	8	3	17312	495.0	-	-	-
4	485.0-495.0	9-10	-	-	-	490.0	492.0	495.0
-	-	11	4	17313	480.0	-	-	-
5	475.0-480.0	12	-	-	-	475.0	-	-
-	-	13	5	17314	470.0	-	-	-
6	420.0-470.0	14-18	-	-	-	420.0	-	-
-	-	19	6	17322	415.0	-	-	-
7	405.0-415.0	20-21	-	-	-	410.0	412.0	415.0
	-	22	7	17315	400.0	-	-	-
8	395.0-400.0	23	-	-	-	395.0	-	-
	-	24	8	17317	390.0	-	-	-
9	370.0-390.0	25-26	-	-	-	370.0	-	-
	-	27	9	17318	365.0	-	-	-
10	355.0-365.0	28-29	-	-	-	360.0	362.0	365.0
	-	30	10	17321	350.0	-	-	-
11	345.0-350.0	31	-	-	-	345.0	-	-
	-	32	11	17316	340.0	-	-	-
12	310.0-340.0	33-35	-	-	-	310.0	-	-

Zone No.	Nominal Monitoring Interval * (ft)	MP Casing No. (from MP Log)	Packer No.	Packer Serial No.	Nominal Packer Position *** (ft)	Measurement Port Depth ** (ft)	Magnetic Collar Depth ** (ft)	Pumping Port Depth ** (ft)
-	-	36	12	13326	305.0	-	-	-
13	295.0-305.0	37-38	-	-	-	300.0	302.0	305.0
-	-	39	13	17324	290.0	-	-	-
14	285.0-290.0	40	-	-	-	285.0	-	-
-	-	41	14	17325	280.0	-	-	-
15	260.0-280.0	42-43	-	-	-	260.0	-	-
-	-	44	15	17740	255.0	-	-	-
16	245.0-255.0	45-46	-	-	-	250.0	252.0	255.0
-	-	47	16	17739	240.0	-	-	-
17	235.0-240.0	48	-	-	-	235.0	-	-
-	-	49	17	17738	230.0	-	-	-
18	195.0-230.0	50-53	-	-	-	195.0	-	-
-	-	54	18	17737	190.0	-	-	-
19	180.0-190.0	55-56	-	-	-	185.0	187.0	190.0
-	-	57	19	17323	175.0	-	-	-
20	170.0-175.0	58	-	-	-	170.0	-	-
-	-	59	20	17743	165.0	-	-	-
21	155.0-165.0	60	-	-	-	155.0	-	-
-	-	61	21	17744	150.0	-	-	-
22	140.0-150.0	62-63	-	-	-	145.0	147.0	150.0
-	-	64	22	17742	135.0	-	-	-
23	130.0-135.0	65	-	-	-	130.0	-	-
-	-	66	23	17745	125.0	-	-	-
24	110.0-125.0	67-68	-	-	-	110.0	-	-
-	-	69	24	17741	105.0	-	-	-

Zone No.	Nominal Monitoring Interval * (ft)	MP Casing No. (from MP Log)	Packer No.	Packer Serial No.	Nominal Packer Position *** (ft)	Measurement Port Depth ** (ft)	Magnetic Collar Depth ** (ft)	Pumping Port Depth ** (ft)
25	95.0-105.0	70-71	-	-	-	100.0	102.0	105.0
-	-	72	25	17746	90.0	-	-	-
26	80-90	73-74	-	-	-	85.0	87.0	90.0
-	-	75	26	17747	75.0	-	-	-
27	70.0-75.0	76	-	-	-	70.0	-	-
-	-	77	27	17748	65.0	-	-	-
Casing	-4.0-65.0	78-86	-	-	-	-	10.0	-

* Depths are with respect to ground surface

** Component positions are referenced to the top of the subject MP System coupling.

*** Packer positions are referenced to the top MP System coupling on the packer.

Monitoring zone dimensions are determined as described on the attached ‘Dimensions of Packer Seals and Monitoring Zones’.

The position of a MOSDAX Transducer in a Measurement Port is illustrated in the attached “MOSDAX Transducer Position”. This information may be used in calculating piezometric levels.

Technical Note



Dimensions of Packer Seals and Monitoring Zones

Westbay System Plastic MP38

Item Description	Dimensions	Description
Coupling		Reference Position: top of coupling is reference position for packer length and depth measurements
Packer		Nominal packer seal length
Coupling or Port		Reference Position: top of coupling is reference position for casing length and depth measurements
Casing (typically in increments of 1, 2, 5 and 10 ft)		$L = \text{Nominal spacing between reference positions: nominal zone length}$ $Z = \text{Actual zone length between packer seals } (Z = L + 2 \text{ ft.})$
Coupling or Port		Reference Position: top of coupling is reference position for packer length and depth measurements
Packer		Nominal packer component length

Discussion Points:

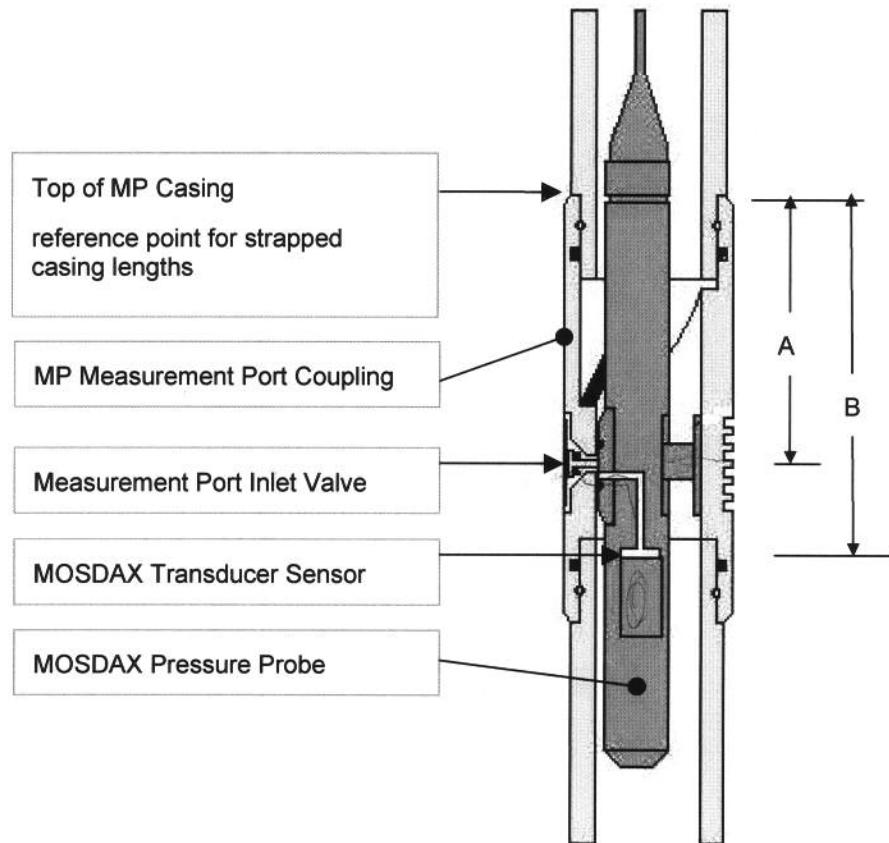
- The top of a coupling (Regular Coupling, Measurement Port or Pumping Port) is the reference point for describing nominal depths and nominal lengths. Actual positions of packer seals and zone lengths are determined with respect to the appropriate reference positions.
- **Packer Position Example:** A packer with a nominal depth of 50 ft (15.2m), will have a nominal packer seal position of 51.3 to 54.3 ft. (15.59 to 16.49m)
- **Zone Length Example:** A zone whose upper packer is at 50 ft (15.2m) and bottom packer is at 70 ft (21.3m) will have a nominal zone length of 15 ft (4.6m) and an actual zone length (between packer seals) of $15.0 + 1.3 + 0.7 = 17.0\text{ft.}$ ($4.6 + 0.39 + 0.2 = 5.19\text{m}$)
- Information on the position of Measurement Port Valve and MOSDAX Transducer sensor, used for detailed calculation of piezometric level measurements, are described separately.

Technical Note



MOSDAX Transducer Position

In an MP System Measurement Port Coupling



System	Measurement Port Type	A	B
Plastic MP38	0205	4.5" (114.3 mm)	6.5" (165.1 mm)

APPENDIX 1

Summary Casing Log	- 4 Pages
Pre-Inflation Piezometric Pressure/Levels Field Data and Calculation Sheet (Dated August 11, 2011)	- 2 Pages
Figure 1, Pre-Inflation Piezometric Pressure Profile	- 1 Page
Post-Inflation Piezometric Pressure/Levels Field Data and Calculation Sheet (Dated August 12, 2011)	- 2 Pages
Figure 2, Post-Inflation Piezometric Pressure Profile	- 1 Page
Casing Installation Log	- 8 Pages
MP Packer Inflation Records	- 27 Pages

Summary Casing Log

Company: CDM
Well: SVP-14 Third Draft
Site: Roosevelt Field, NY
Project:

Job No: WB845
Author: DL

Well Information

Reference Datum: Ground Level
Elevation of Datum: 0.00 ft.
MP Casing Top: 0.00 ft.
MP Casing Length: 545.16 ft.

Borehole Depth: 550.00 ft.
Borehole Inclination: Vertical
Borehole Diameter: 4.00 in.

Well Description:

Plastic MP38

Other References:

MP38 inside 4-inch ID multi-screen well
As per e-mail July 21, 2011

File Information

File Name: SVP-14D3.WWD
Report Date: Wed Aug 03 16:28:13 2011

File Date: Aug 03 16:13:07 2011

Sketch of Wellhead Completion

Legend

(Qty) MP Components

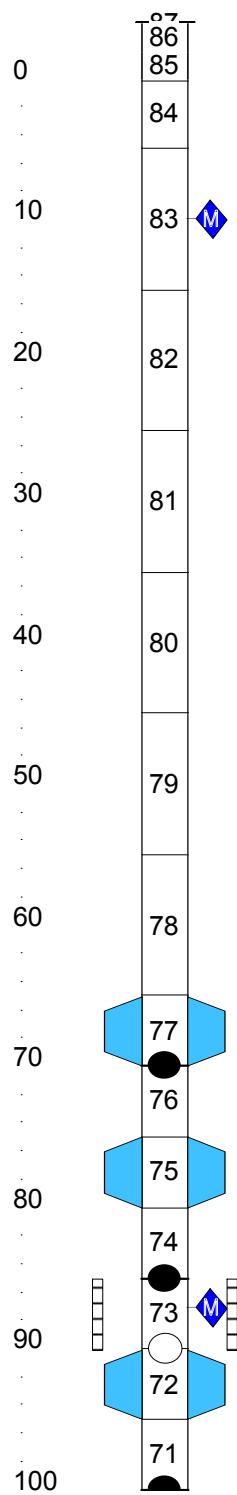
(Library - WD Library 7/27/00)

		Geology	Backfill/Casing
	(2) 0203 - MP38 End Cap		
	(2) 020102 - MP38 Casing 3 (2F/0.6M)		
	(32) 020105 - MP38 Casing 2 (5F/1.5M)		
	(25) 020110 - MP38 Casing 1 (10F/3M)		
	(27) 0239 - MP38 Packer 82mm (5F/1.5M)		
	(49) 0202 - MP38 Regular Coupling		
	(27) 0205 - MP38 Measurement Port		
	(10) 0224 - MP38 Pumping Port		
	(11) 0216 - Magnetic Location Collar		
			Well Screen

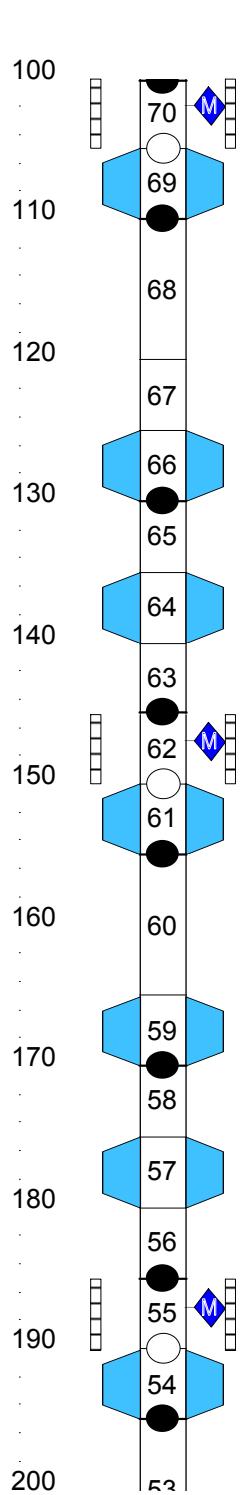
Well Designer Report
CDM

Job No: WB845
Well: SVP-14 Third Draft

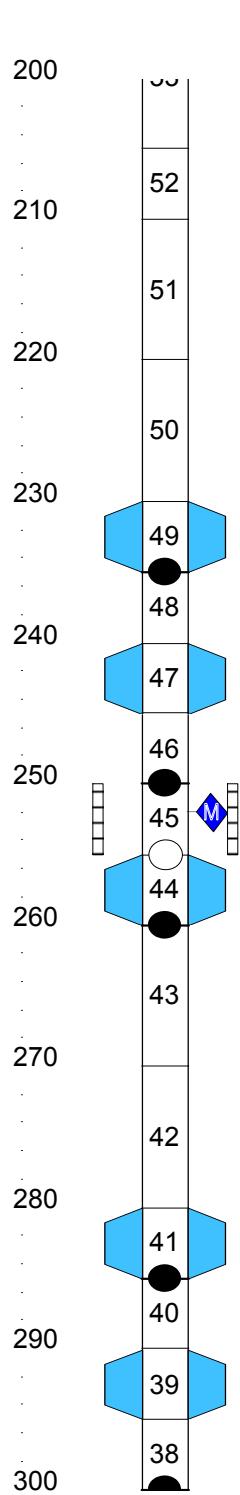
Scale WellIMP
Feet Casingng



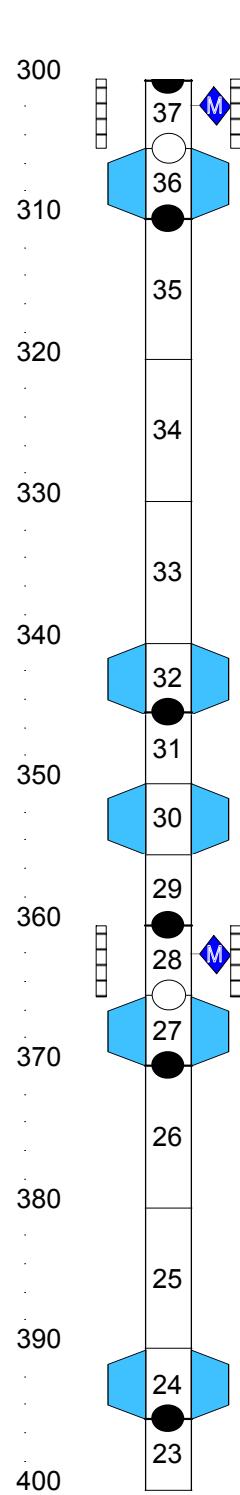
Scale WellIMP
Feet Casingng



Scale WellIMP
Feet Casingng



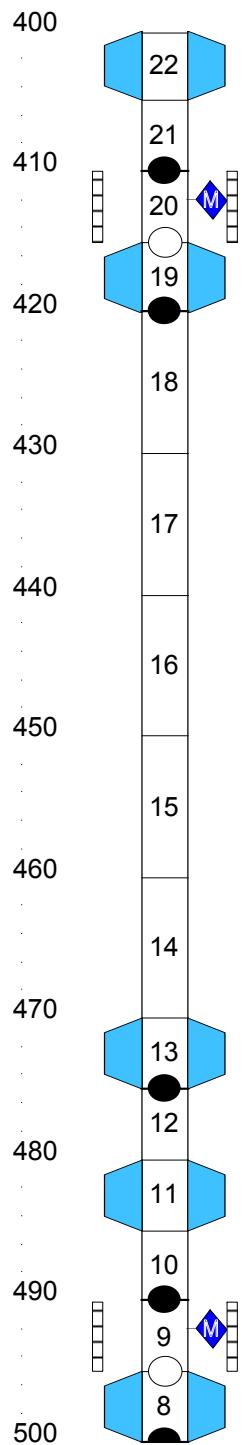
Scale WellIMP
Feet Casingng



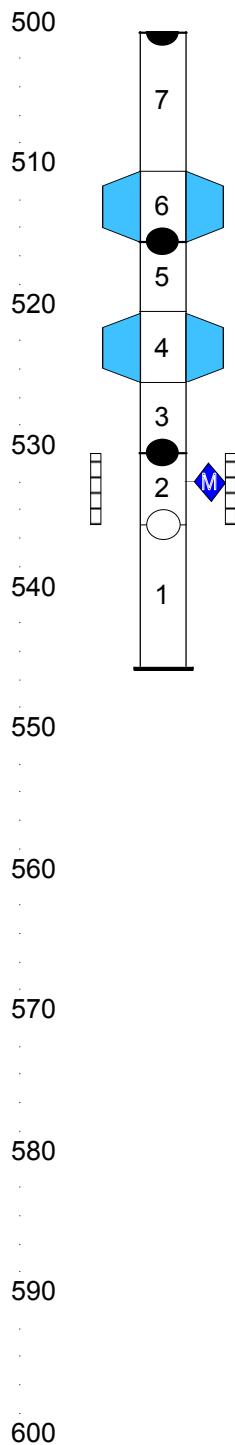
Well Designer Report
CDM

Job No: WB845
Well: SVP-14 Third Draft

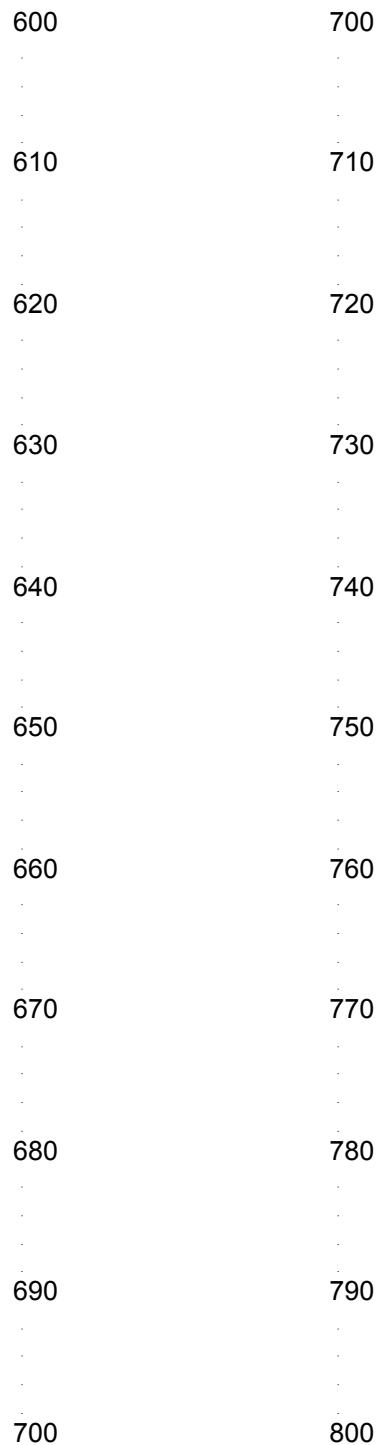
Scale WellIMP
Feet Casingng



Scale WellIMP
Feet Casingng



Scale WellIMP
Feet Casingng





Westbay Piezometric Pressures/Levels

Field Data and Calculation Sheet

Well No.: SUP-14
 Datum: 68
 Elev. G.S.: -
 Height of Westbay above G.S.: -
 Elev. top of Westbay Casing: -
 Reference Elevation: -
 Borehole angle: 90°

Probe Type: Schlumberger
 Serial No.: 31155
 Probe Range: 0-500
 Westbay Casing Type: MP-38
 Sampler Valve Position: Closed

Date: 5/11/11
 Client: E OnTech
 Job No.: F50754
 Location: Garden Rd.
 Weather: Clear 70°F
 Operator: ME, GS

Note: "Port position" in angled boreholes refer to position along drillhole. True depth (Dp) needs to be calculated using borehole angle and deviation data to calculate zone piezometric level (Dz).

Ambient Reading (P_{atm}) (pressure, temperature, time)

Start: Pressure	<u>1446</u>	Finish: <u>14655</u>
Temp	<u>22.39</u>	<u>14.88</u>
Time	<u>7:35</u>	<u>8:48</u>

Port No.	Port Position From Log ()	Port Position From Cable ()	True Port Depth "Dp" ()	Fluid Pressure Readings					Pressure Head Outside Port () H = (P2-Patm)/w	Piez. Level Outside Port () Dz = Dp - H	Comments	
				Inside Casing (P1)	Outside Casing (P2)	Time H:M:S	Probe Temp. (°C)	Inside Casing (P1)				
1	530	527		148.51	234.43	7:43	16.70	148.51				Pre - Inflation
2	515	512		142.00	208.01	7:46	15.25	142.00				
3	500	497		135.47	221.51	7:48	14.70	135.47				
4	490	487		131.12	217.18	7:57	14.27	131.12				
5	475	472		124.60	210.70	7:53	14.02	124.60				
6	420	417		100.69	186.93	7:57	13.97	100.69				
7	410	408		96.33	182.59	7:59	14.02	96.33				
8	395	393		89.80	176.11	8:01	14.12	89.81				
9	370	368		78.93	165.29	8:04	14.22	78.93				
10	360	358		74.58	160.97	8:06	14.33	74.58				
11	345	343		68.05	154.49	8:09	14.38	68.05				
12	310	308		52.81	139.34	8:12	14.47	52.81				
13	300	298		48.45	134.99	8:15	14.52	48.45				
14	265	283		41.92	128.50	8:17	14.55	41.92				
15	260	258		31.02	117.68	8:19	14.55	31.02				

Notes: $w = 0.4335 \text{ psi/ft} (1.422 \text{ psi/m}) \text{ of H}_2\text{O}$

Dz = piezometric level in zone

P_{atm} = atmospheric pressure

H = pressure head of water in zone

Dp = true depth of measurement port



Westbay Piezometric Pressures/Levels

Field Data and Calculation Sheet

Well No.: _____

Datum: _____

Elev. G.S.: _____

Height of Westbay above G.S.: _____

Elev. top of Westbay Casing:

Reference Elevation:

Borehole angle:

Probe Type:

Serial No.:

Probe Range:

Westbay Casing Type:

Sampler Valve Position:

Date: _____

Client:

Job No.:

Location: _____

Weather:

Operator:

Note: "Port position" in angled boreholes refer to position along drillhole. True depth (Dp) needs to be calculated using borehole angle and deviation data to calculate zone piezometric level (Dz).

Ambient Reading (P_{atm}) (pressure, temperature, time)

Start: Pressure _____ Finish: _____
Temp _____
Time _____

Notes:

$w = 0.4335 \text{ psi/ft} (1.422 \text{ psi/m})$ of H_2O

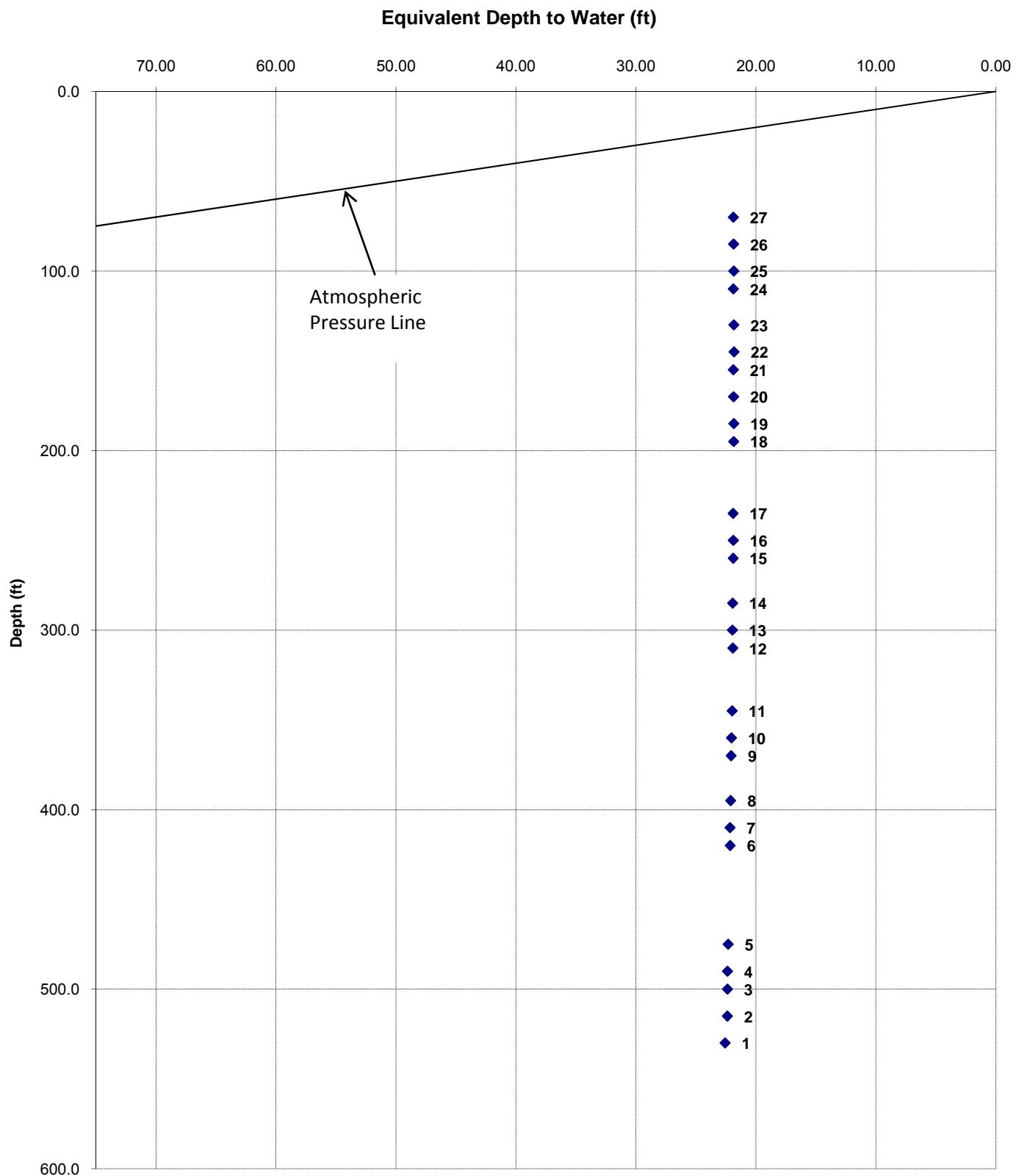
D_z = piezometric level in zone

P_{atm} = atmospheric pressure

H = pressure head of water in nozzle

Do a true death-of-measurement test

Figure 7.
Well: SVP-14
Pre-Inflation Pressure Profile





Westbay Piezometric Pressures/Levels

Field Data and Calculation Sheet

Well No.: SWP-14
 Datum: G3
 Elev. G.S.: -
 Height of Westbay above G.S.: -
 Elev. top of Westbay Casing: -
 Reference Elevation: -
 Borehole angle: 90°

Probe Type: Sampler
 Serial No.: 3555
 Probe Range: 0-500
 Westbay Casing Type: MP-28
 Sampler Valve Position: Closed

Date: 8/12/11
 Client: Unitech
 Job No.: F50754
 Location: Garden Rd
 Weather: Clear 68°F
 Operator: ME, G3

Note: "Port position" in angled boreholes refer to position along drillhole. True depth (Dp) needs to be calculated using borehole angle and deviation data to calculate zone piezometric level (Dz).

Ambient Reading (P_{atm}) (pressure, temperature, time)
 Start: Pressure 14.64 Finish: 14.65
 Temp 17.82 15.08
 Time 7:07 8:33

Port No.	Port Position From Log ()	Port Position From Cable ()	True Port Depth "Dp" ()	Fluid Pressure Readings					Pressure Head Outside Port () H = (P2-Patm)/w	Piez. Level Outside Port () Dz = Dp - H	Comments	
				Inside Casing (P1)	Outside Casing (P2)	Time H:M:S	Probe Temp. (°C)	Inside Casing (P1)				
1	530	528		236.47	232.94	7:33	15.34	236.61				Port - In Place
2	515	513		230.09	208.91	7:36	14.41	230.10				
3	500	498		223.57	204.49	7:38	13.94	223.57				
4	490	488		219.22	215.66	7:40	13.76	219.33				
5	475	473		212.73	190.00	7:43	13.56	212.73				
6	470	478		188.84	174.55	7:45	13.53	188.85				
7	410	409		184.50	181.56	7:48	13.64	184.50				
8	395	394		177.99	162.30	7:51	13.73	177.98				
9	370	369		167.13	165.16	7:53	13.83	167.12				
10	360	359		162.77	160.72	7:55	13.91	162.76				
11	345	345		156.26	147.85	7:57	14.03	156.26				
12	310	310		141.05	139.67	7:59	14.15	141.05	288.30	21.70		
13	300	301		136.69	135.06	8:02	14.29	136.69	277.79	22.21		
14	285	285		130.17	128.99	8:04	14.35	130.17				
15	260	260		119.30	117.97	8:06	14.40	119.30				

Notes: $w = 0.4335 \text{ psi/ft} (1.422 \text{ psi/m}) \text{ of H}_2\text{O}$ Dz = piezometric level in zone $P_{atm} = \text{atmospheric pressure}$ H = pressure head of water in zone

Dp = true depth of measurement port



Schlumberger
WATER SERVICES

Westbay Piezometric Pressures/Levels

Field Data and Calculation Sheet

Well No.: _____

Datum: _____

Elev. G.S.: _____

Height of Westbay above G.S.: _____

Elev. top of Westbay Casing: _____

Reference Elevation: _____

Borehole angle: _____

Probe Type: _____

Serial No.: _____

Probe Range: _____

Westbay Casing Type: _____

Sampler Valve Position: _____

Date: _____

Client: _____

Job No.: _____

Location: _____

Weather: _____

Operator: _____

Note: "Port position" in angled boreholes refer to position along drillhole. True depth (Dp) needs to be calculated using borehole angle and deviation data to calculate zone piezometric level (Dz).

Ambient Reading (P_{atm}) (pressure, temperature, time)

Start: Pressure _____ Finish: _____
Temp _____ Time _____

Notes

$w = 0.4335 \text{ psi/ft} (1.422 \text{ psi/m})$ of H_2O

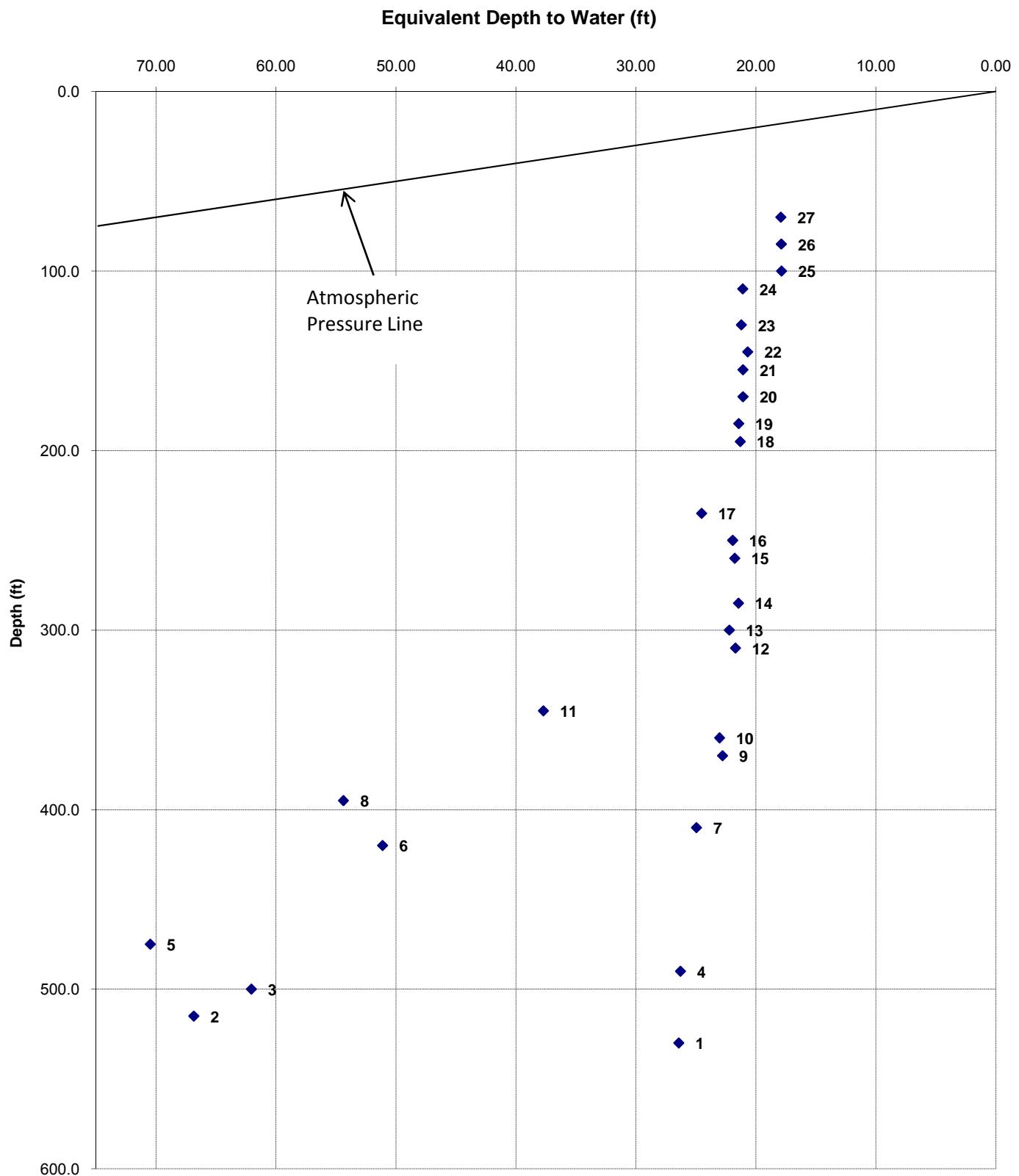
D_z = piezometric level in zone

P_{atm} = atmospheric pressure

H = pressure head of water in zone

D_P = true depth of measurement port

Figure 7.
Well: SVP-14
Post-Inflation Pressure Profile



Casing Installation Log

Company: CDM
Well: SVP-14 Third Draft
Site: Roosevelt Field, NY
Project:

Job No: WB845
Author: DL

Well Information

Reference Datum: Ground Level
Elevation of Datum: 0.00 ft.
MP Casing Top: 0.00 ft.
MP Casing Length: 545.16 ft.

Borehole Depth: 550.00 ft.
Borehole Inclination: Vertical
Borehole Diameter: 4.00 in.

Well Description:

Plastic MP38

Other References:

MP38 inside 4-inch ID multi-screen well

As per e-mail July 21, 2011

File Information

File Name: SVP-14D3.WWD

File Date: Aug 03 16:13:07 2011

Report Date: Wed Aug 03 16:29:04 2011

Comments

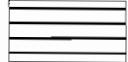
Client requests filter socks

Log Information

Borehole condition confirmed.
MP well design & preparation.
MP well design checked.
MP well and borehole approved to install.

(method) _____ Date: _____
By: *Schlesinger* Date: *8/13/11*
By: *Kul* Date: *8/10/11*
By: *Ben M* Date: *8/10/11*

Legend

(Qty) MP Components (Library - WD Library 7/27/00)	Geology	Backfill/Casing
— (2) 0203 - MP38 End Cap		 Well Screen
(2) 020102 - MP38 Casing 3 (2F/0.6M)		
(32) 020105 - MP38 Casing 2 (5F/1.5M)		
(25) 020110 - MP38 Casing 1 (10F/3M)		
— [] (27) 0239 - MP38 Packer 82mm (5F/1.5M)		
— (49) 0202 - MP38 Regular Coupling		
● (27) 0205 - MP38 Measurement Port		
○ (10) 0224 - MP38 Pumping Port		
◆ (11) 0216 - Magnetic Location Collar		

Well Designer Report
CDM

Job No: WB845
Well: SVP-14 Third Draft

Scale Feet	MP Well Casing Casing	QA Tested OK	MP Casing Description
0			
10			
20			
30			
40			
50			
60			
70			
80			
90			
100			
86			
85			
84			
83	◆		
82			
81			
80			
79			
78			
77			
76			
75			
74			
73			
72			
71			

Well Designer Report
CDM

Job No: WB845
Well: SVP-14 Third Draft

Scale Feet	MP Well Casing Casing	QA Tested OK	MP Casing Description
100			
110	70 69	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0205 - MP38 Measurement Port <i>6835</i> 020105 - MP38 Casing 2 (5F/1.5M) 0224 - MP38 Pumping Port <i>8390</i> 0239 - MP38 Packer 82mm (5F/1.5M) <i>17741</i> 0205 - MP38 Measurement Port <i>6836</i> <i>100%</i>
120	68	<input checked="" type="checkbox"/>	020110 - MP38 Casing 1 (10F/3M)
130	67 66 65	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 020105 - MP38 Casing 2 (5F/1.5M) 0202 - MP38 Regular Coupling 0239 - MP38 Packer 82mm (5F/1.5M) <i>17745</i> <i>100%</i> 0205 - MP38 Measurement Port <i>6833</i> 020105 - MP38 Casing 2 (5F/1.5M)
140	64 63 62 61	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 0239 - MP38 Packer 82mm (5F/1.5M) <i>17742</i> <i>100%</i> 0202 - MP38 Regular Coupling 020105 - MP38 Casing 2 (5F/1.5M) 0205 - MP38 Measurement Port <i>6832</i> 020105 - MP38 Casing 2 (5F/1.5M) 0224 - MP38 Pumping Port <i>8392</i> 0239 - MP38 Packer 82mm (5F/1.5M) <i>17744</i> <i>100%</i> 0205 - MP38 Measurement Port <i>6830</i>
150	60	<input checked="" type="checkbox"/>	020110 - MP38 Casing 1 (10F/3M)
160			
170	59 58	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 0239 - MP38 Packer 82mm (5F/1.5M) <i>17743</i> <i>100%</i> 0205 - MP38 Measurement Port <i>6823</i> 020105 - MP38 Casing 2 (5F/1.5M)
180	57	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 0239 - MP38 Packer 82mm (5F/1.5M) <i>17523</i> <i>100%</i> 0202 - MP38 Regular Coupling 020105 - MP38 Casing 2 (5F/1.5M) 0205 - MP38 Measurement Port <i>8344</i> <i>6827</i>
190	56 55 54	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	020105 - MP38 Casing 2 (5F/1.5M) 0224 - MP38 Pumping Port <i>8344</i> 0239 - MP38 Packer 82mm (5F/1.5M) <i>17737</i> <i>100%</i> 0205 - MP38 Measurement Port <i>6825</i>
200	53	<input checked="" type="checkbox"/>	020110 - MP38 Casing 1 (10F/3M)

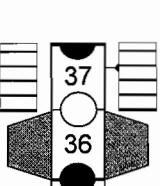
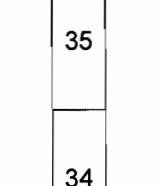
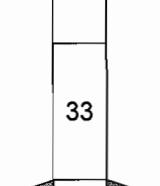
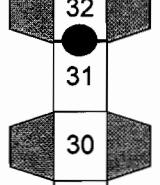
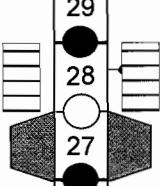
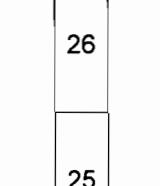
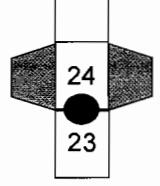
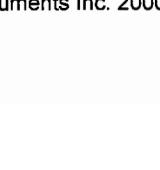
Well Designer Report
CDM

Job No: WB845
Well: SVP-14 Third Draft

Scale Feet	MP Well Casing Casing	QA Tested OK	MP Casing Description
200		<input checked="" type="checkbox"/>	020110 - MP38 Casing 1 (10F/3M)
210	52	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 020105 - MP38 Casing 2 (5F/1.5M) 0202 - MP38 Regular Coupling
220	51	<input checked="" type="checkbox"/>	020110 - MP38 Casing 1 (10F/3M)
230	50	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 020110 - MP38 Casing 1 (10F/3M)
240	49	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 0239 - MP38 Packer 82mm (5F/1.5M) 17738 170/40
240	48	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0205 - MP38 Measurment Port 6829
240	47	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	020105 - MP38 Casing 2 (5F/1.5M)
250	46	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 0239 - MP38 Packer 82mm (5F/1.5M) 17739 170/40
250	45	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	020105 - MP38 Casing 2 (5F/1.5M)
260	44	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0205 - MP38 Measurment Port 6828 020105 - MP38 Casing 2 (5F/1.5M) 0224 - MP38 Pumping Port 8348 0239 - MP38 Packer 82mm (5F/1.5M) 17740 165/40
260	43	<input checked="" type="checkbox"/>	0205 - MP38 Measurment Port 6822
270	42	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	020110 - MP38 Casing 1 (10F/3M)
280	41	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 0239 - MP38 Packer 82mm (5F/1.5M) 17325 145/40
290	40	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0205 - MP38 Measurment Port 6824 020105 - MP38 Casing 2 (5F/1.5M)
300	39	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 0239 - MP38 Packer 82mm (5F/1.5M) 17324 170/40
	38	<input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 020105 - MP38 Casing 2 (5F/1.5M)

Well Designer Report
CDM

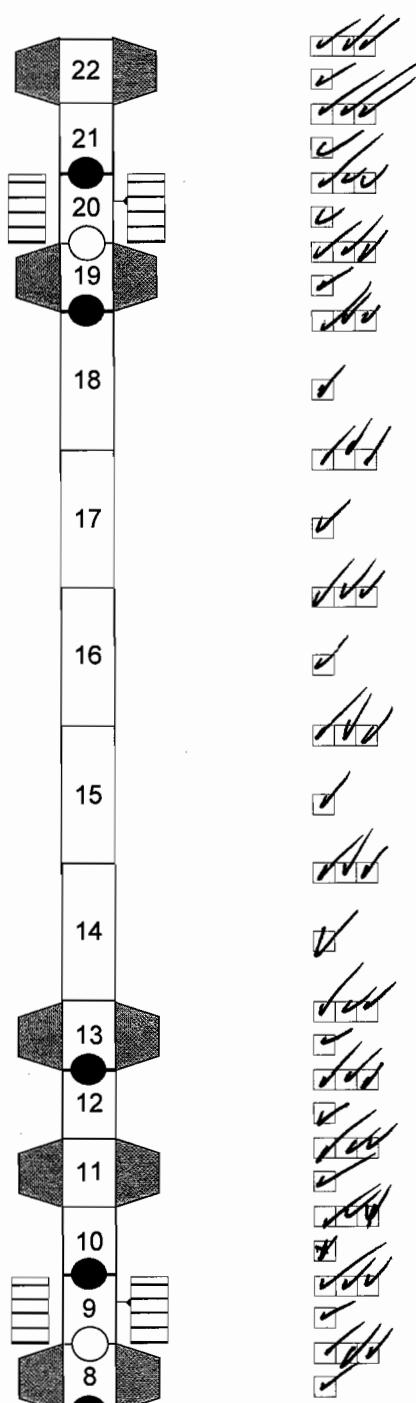
Job No: WB845
Well: SVP-14 Third Draft

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310		<input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	020110 - MP38 Casing 1 (10F/3M)
320		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling
330		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	020110 - MP38 Casing 1 (10F/3M)
340		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 0239 - MP38 Packer 82mm (5F/1.5M) <i>17316</i> <i>165/185</i> 0205 - MP38 Measurement Port <i>6831</i>
350		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 0239 - MP38 Packer 82mm (5F/1.5M) <i>17321</i> <i>165/185</i> 0202 - MP38 Regular Coupling
360		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	020105 - MP38 Casing 2 (5F/1.5M) 0205 - MP38 Measurement Port <i>6840</i> 020105 - MP38 Casing 2 (5F/1.5M) 0224 - MP38 Pumping Port <i>6837</i> 0239 - MP38 Packer 82mm (5F/1.5M) <i>17318</i> <i>170/185</i> 0205 - MP38 Measurement Port <i>6821</i>
370		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	020110 - MP38 Casing 1 (10F/3M)
380		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling
390		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	020110 - MP38 Casing 1 (10F/3M)
400		<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	0202 - MP38 Regular Coupling 0239 - MP38 Packer 82mm (5F/1.5M) <i>17317</i> <i>165/185</i> 0205 - MP38 Measurement Port <i>6815</i> 020105 - MP38 Casing 2 (5F/1.5M)

Well Designer Report
CDM

Job No: WB845
Well: SVP-14 Third Draft

Scale Feet	MP Well Casing Casing	QA Tested OK	MP Casing Description
400			
410			
420			
430			
440			
450			
460			
470			
480			
490			
500			



Well Designer Report

CDM

Job No: WB845
Well: SVP-14 Third Draft



Schlumberger
WATER SERVICES

Sheet 1 of 27

Westbay Packer Inflation Record

Project: United - Old Rossend Field Project No.: F50754 Well No.: SUP-14

Location: Carson Rd. Completed by: C8 Date Inflated: 8/11/11

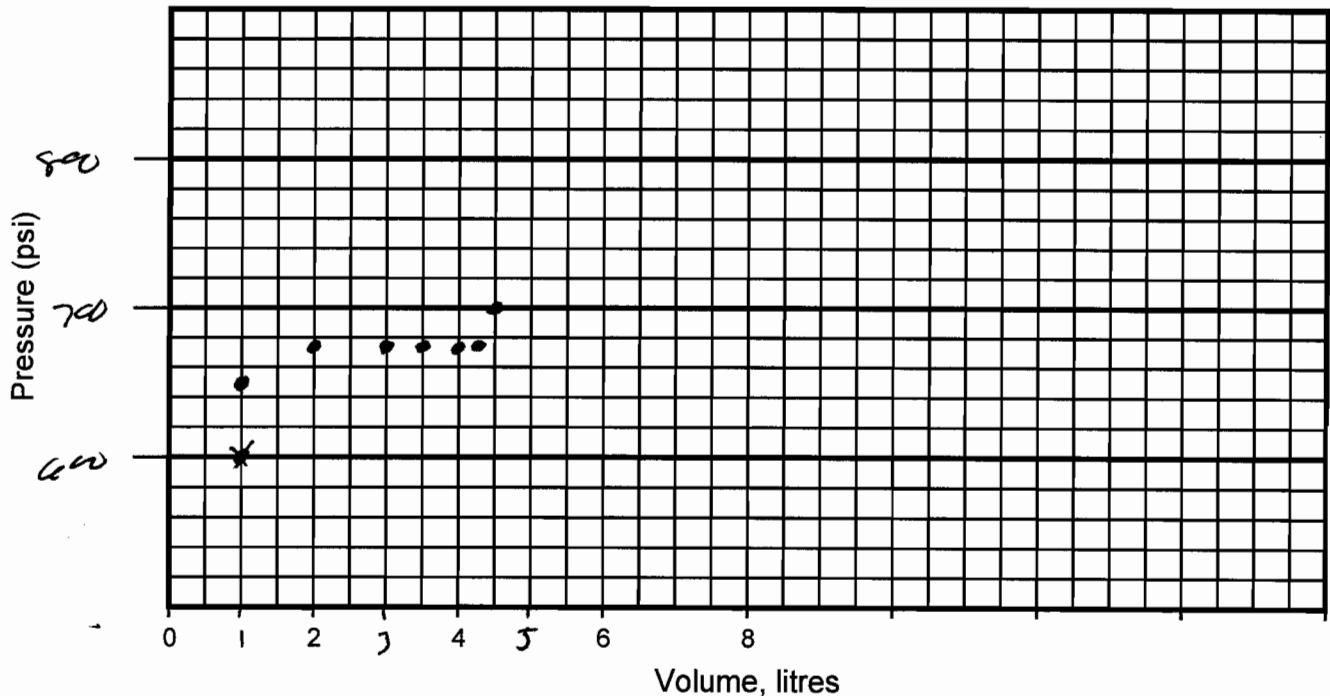
Packer No. 1 Depth (ft / m): 525 Inflation Tool No.: T1001087

Packer Valve Pressure, P_V : 140 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 800 psi

Borehole Water Level: 22.40 (ft / m) = 9.7 psi (P_W)

Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 120 psi

Volume	1.0	2.0	3.0	3.5	4.0	4.25	4.5	/	4.25	
PSI	650	675	675	675	675	675	700	/	6	



Comments: Packer # 1

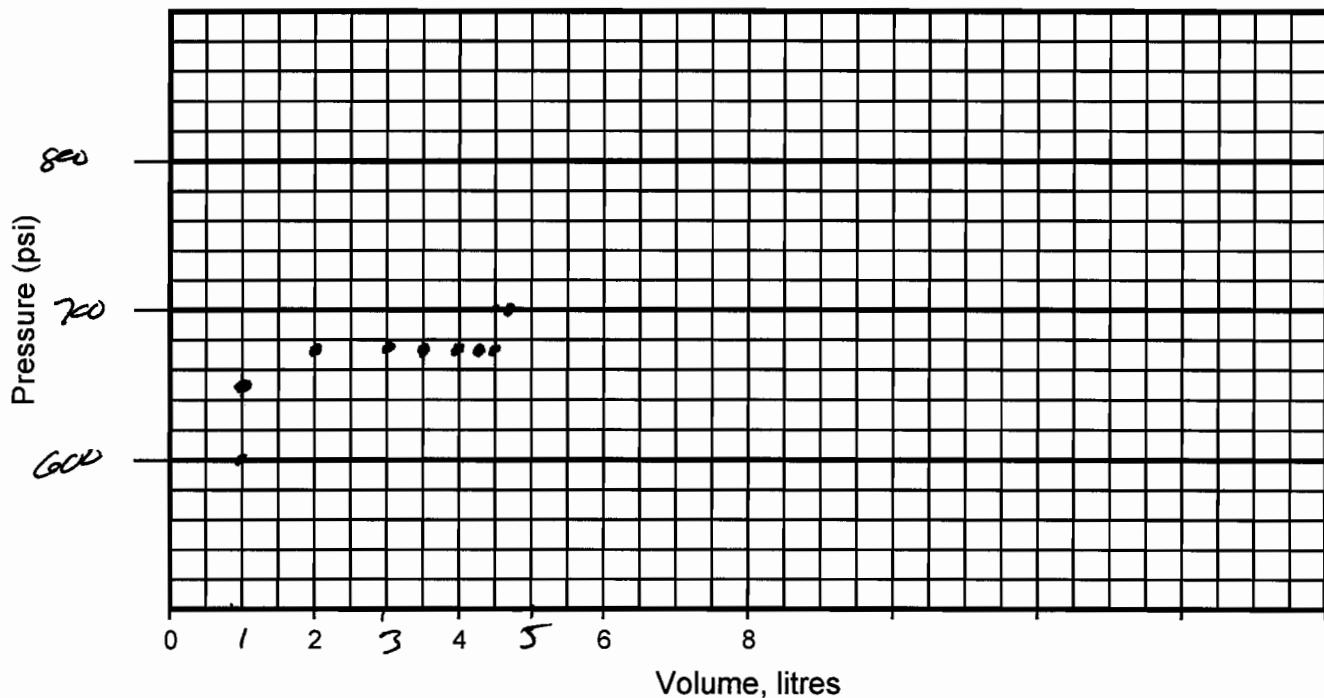
Time - 9:10

Sheet 2 of 2

Westbay Packer Inflation Record

Project: Unitech - Oil Record Field Project No.: FSD754 Well No.: SUP-14
Location: Gordon Rd. Completed by: GS Date Inflated: 8/11/11
Packer No. 2 Depth (ft / m): 515 Inflation Tool No.: TW 1007
Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 480 psi
Borehole Water Level: 23.4 (ft / m) = 9.7 psi (P_W)
Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (L)	1.0	2.0	3.0	3.5	4.0	4.25	4.50	4.60	/	4.45
PSI	650	675	675	675	675	675	675	700	/	6

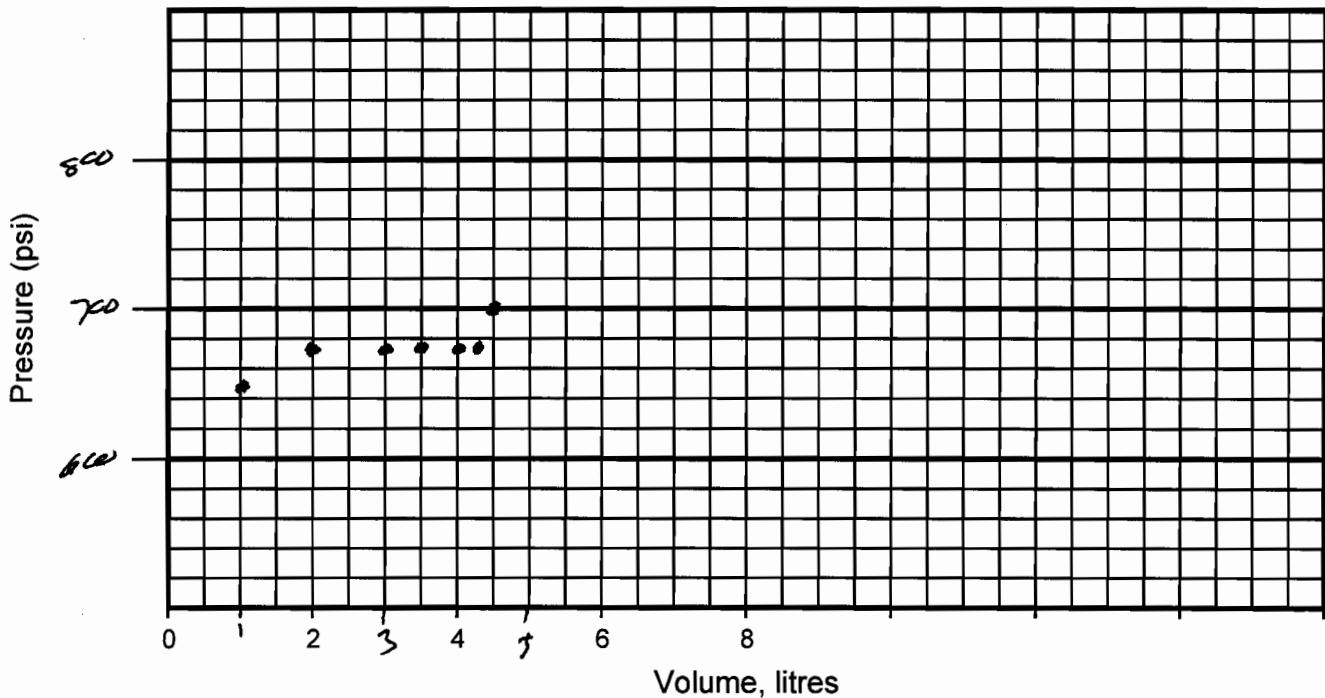


Comments: Packer # 2 Time - 9:29

Westbay Packer Inflation Record

Project: Unitech - O12 Roosevelt Field Project No.: F50754 Well No.: SLP - 14
 Location: Garden Rd. Completed by: GS Date Inflated: 8/11/11
 Packer No. 3 Depth (ft / m): 500 Inflation Tool No.: TIW 1087
 Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : _____ psi Tool Pressure, P_T : 450 psi
 Borehole Water Level: 20.4 (ft / m) = 9.7 psi (P_W)
 Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ _____ psi

Volume (L)	1.0	2.0	3.0	3.5	4.0	4.25	4.50	/	4.30	
PSI	650	675	675	675	675	675	700	/	Ø	

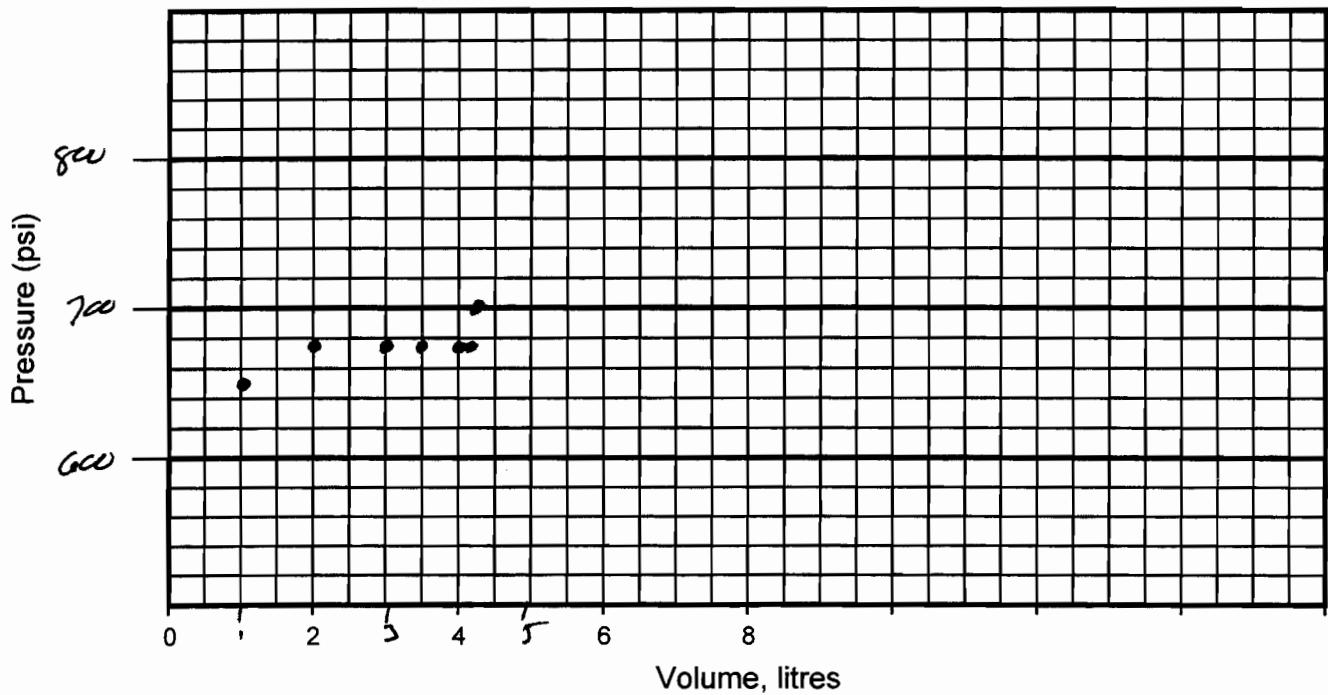

 Comments: Packer # 3

 Time - 9:47

Westbay Packer Inflation Record

Project: Unitech -018 Roosevelt Fick Project No.: P80754 Well No.: SUP-14
 Location: Garden Rd Completed by: GS Date Inflated: 8/11/11
 Packer No. 4 Depth (ft / m): 485 Inflation Tool No.: TIU 1087
 Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 450 psi
 Borehole Water Level: 224 (ft / m) = 4.7 psi (P_W)
 Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (c)	1.0	2.0	3.0	3.5	4.0	4.25	4.35			
PSI	650	675	675	675	675	700	700			



Comments: Packer # 4 Time - 10:03

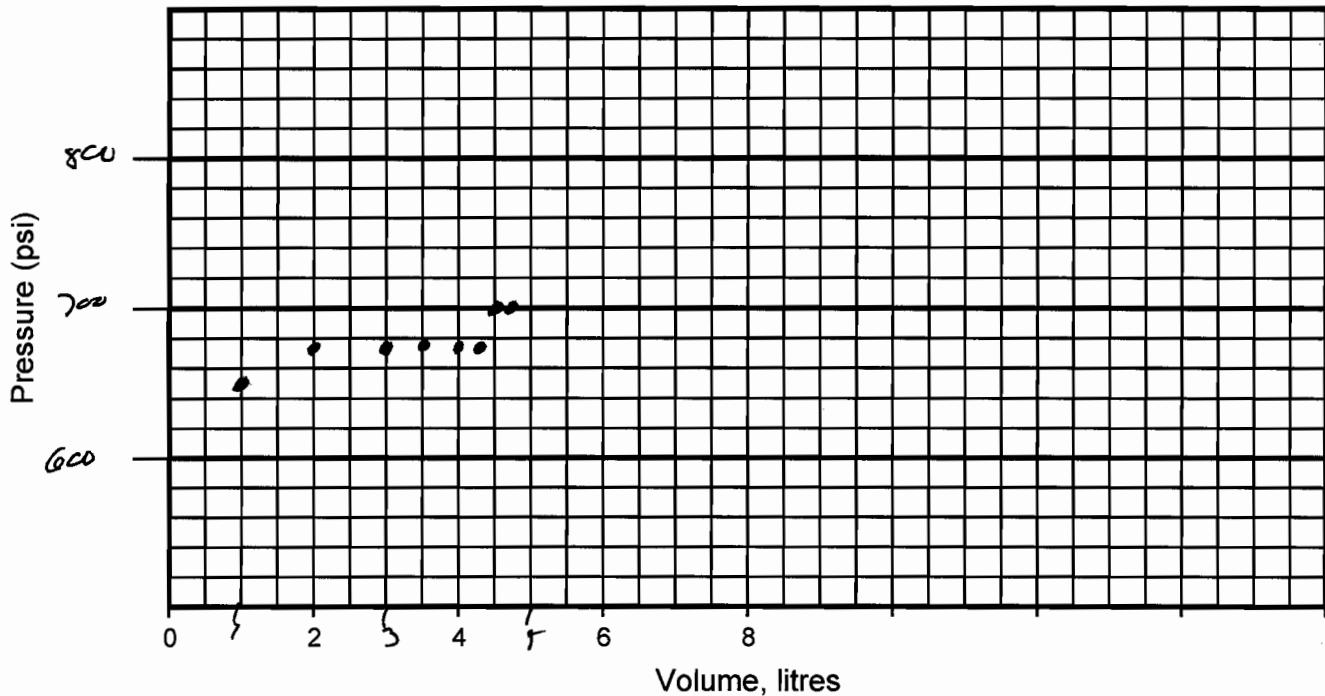


Sheet 5 of 27

Westbay Packer Inflation Record

Project: Untech - Old Roosevelt Field Project No.: SUP-14 Well No.: F50254
Location: Garden Rd. Completed by: CS Date Inflated: 5/11/11
Packer No. 5 Depth (ft / m): 475 Inflation Tool No.: TIW 1087
Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 450 psi
Borehole Water Level: 424 (ft / m) = 97 psi (P_W)
Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (L)	1.0	2.0	3.0	3.5	4.0	4.25	4.50	4.65	/	4.90
PSI	650	675	675	675	675	675	700	700	/	6

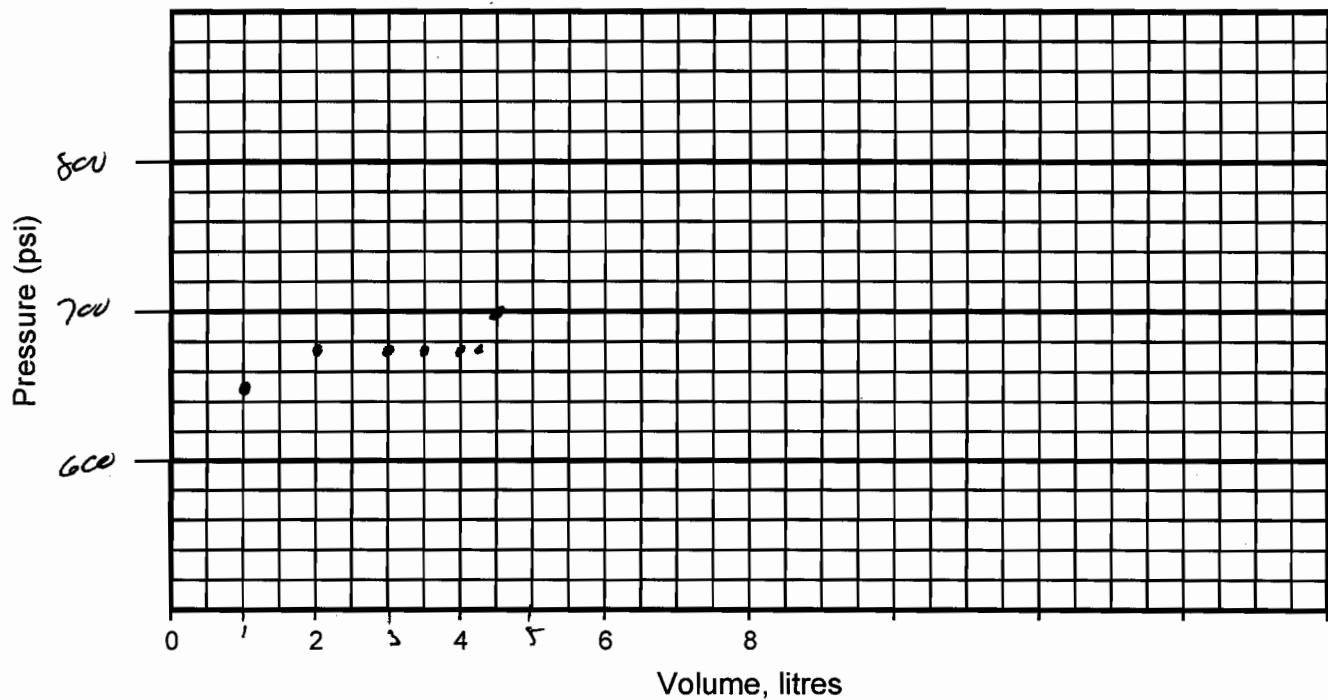
Comments: Packer # 5 Time - 10:19

Sheet 6 of 27

Westbay Packer Inflation Record

Project: United Old Roosevelt Field Project No.: F50754 Well No.: SUP-14Location: Garden RL Completed by: CS Date Inflated: 8/11/11Packer No. 6 Depth (ft / m): 420 Inflation Tool No.: JW 1087Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 450 psiBorehole Water Level: 22.4 (ft / m) = 9.7 psi (P_W)Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (L)	1.0	2.0	3.0	3.5	4.0	4.25	4.50	/	4.75	
PSI	680	675	675	675	675	675	700	/	680	

Comments: Packer # 6Time - 10:37

Westbay Packer Inflation Record

Project: Unitech - Old Roosevelt Field Project No.: FS0254 Well No.: SUP-11

Location: Garden Rd. Completed by: CS Date Inflated: 8/11/11

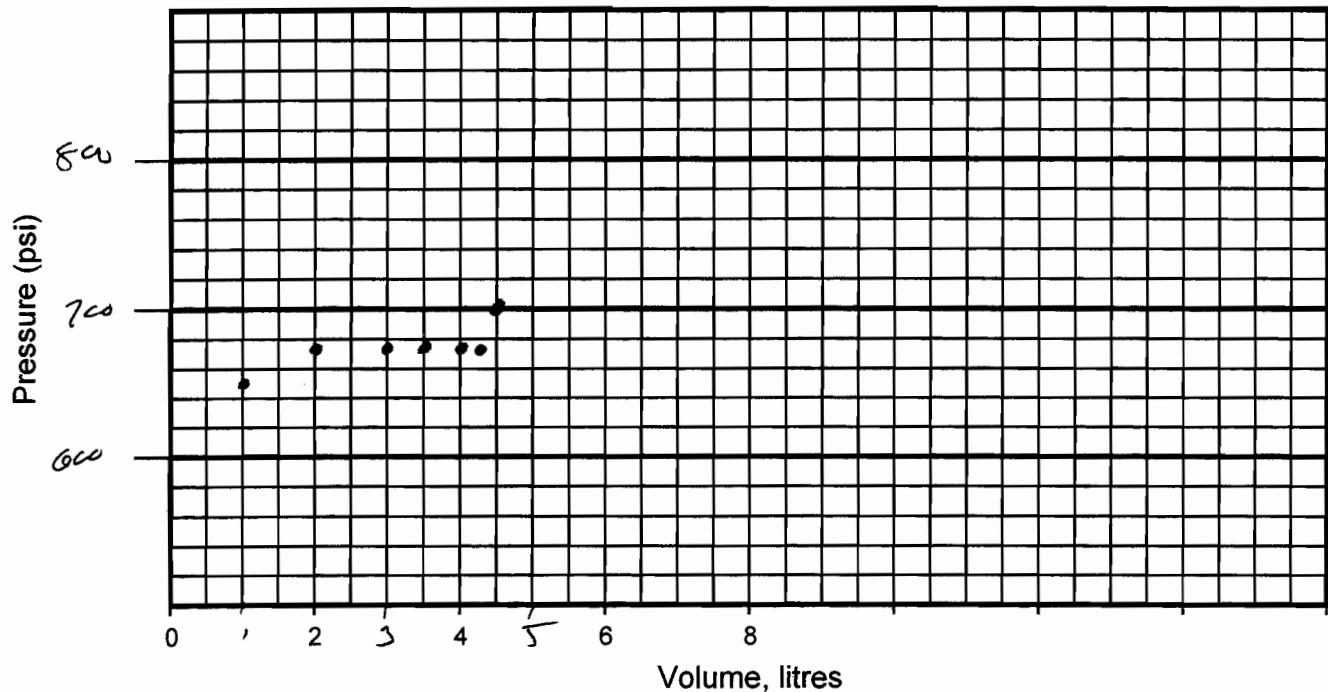
Packer No. 7 Depth (ft / m): 905 Inflation Tool No.: TIW 1087

Packer Valve Pressure, P_V : 150 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 450 psi

Borehole Water Level: 22.4 (ft / m) = 9.7 psi (P_W)

Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T = 110$ psi

Volume (c)	1.0	2.0	3.0	3.5	4.0	4.25	4.50	/	4.25	
PSI	650	675	675	675	675	675	700	/	Ø	



Comments: Packer # 7

Time - 10:54

Westbay Packer Inflation Record

Project: Unitech - Old Roosevelt Field Project No.: P80754 Well No.: SUP-14

Location: Garden Rd Completed by: CS Date Inflated: 8/4/11

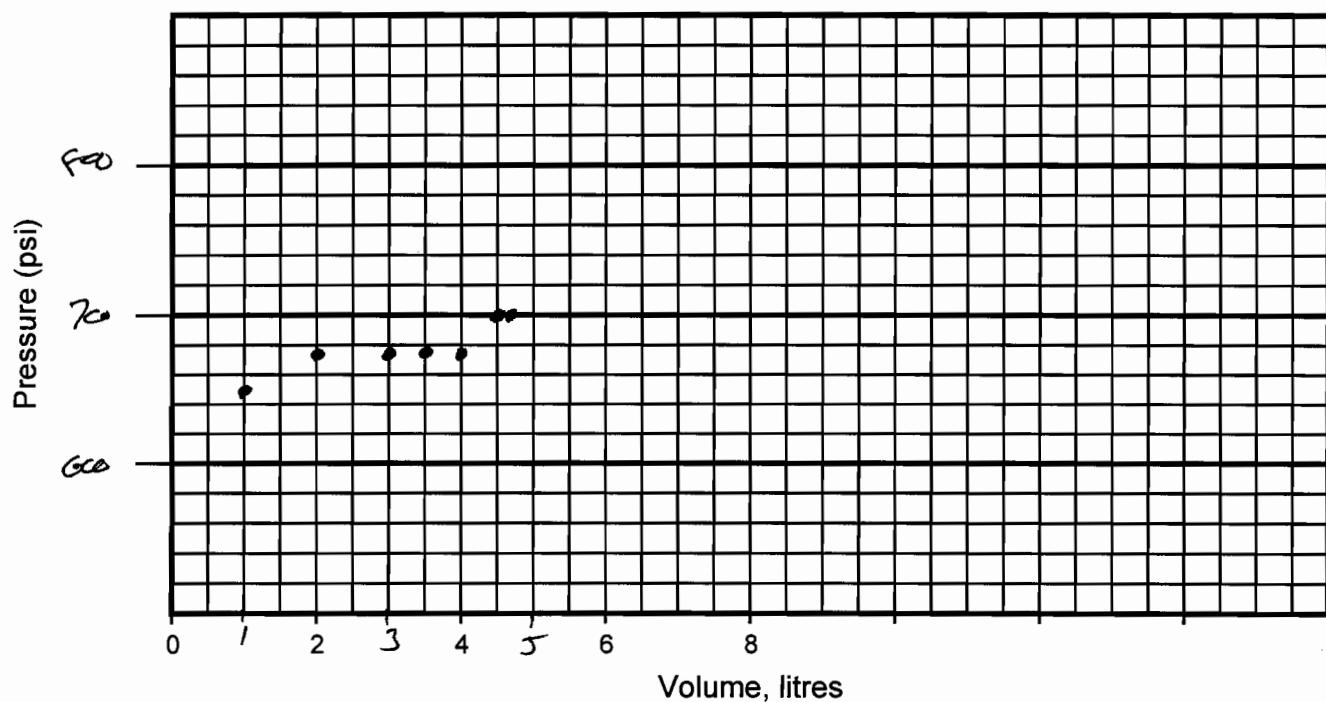
Packer No. 8 Depth (ft / m): 395 Inflation Tool No.: TIW 1087

Packer Valve Pressure, P_V : 140 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 450 psi

Borehole Water Level: _____ (ft / m) = _____ psi (P_W)

Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 120 psi

Volume (cc)	10	20	30	35	40	425	450	465	/	485
PSI	650	675	675	675	675	675	700	700	/	65



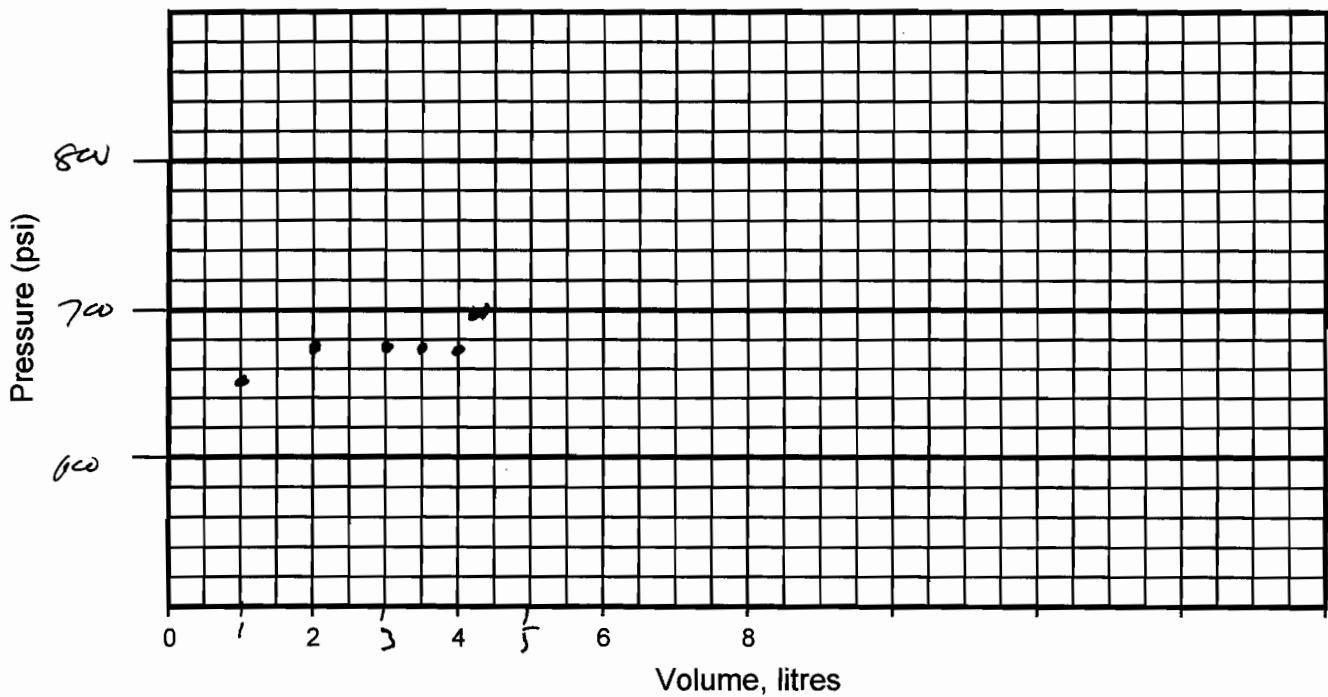
Comments: Packer # 8

Time - 11:10

Westbay Packer Inflation Record

Project: Untech - Old Russell Fork Project No.: F30754 Well No.: SUP-14
 Location: Carby RL Completed by: CS Date Inflated: 8/11/11
 Packer No. 9 Depth (ft / m): 370 Inflation Tool No.: TW 1087
 Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 720 psi Tool Pressure, P_T : 450 psi
 Borehole Water Level: 224 (ft / m) = 87 psi (P_W)
 Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (C)	1.0	2.0	3.0	3.5	4.0	4.35	4.35	1	4.20	
PSI	650	675	675	675	675	700	700	/	650	


 Comments: Packer # 9

 Time - 11:28

Westbay Packer Inflation Record

Project: Untech - Old Roosevelt Frk Project No.: F50754 Well No.: SUP-14

Location: Garden RL Completed by: GS Date Inflated: 8/11/11

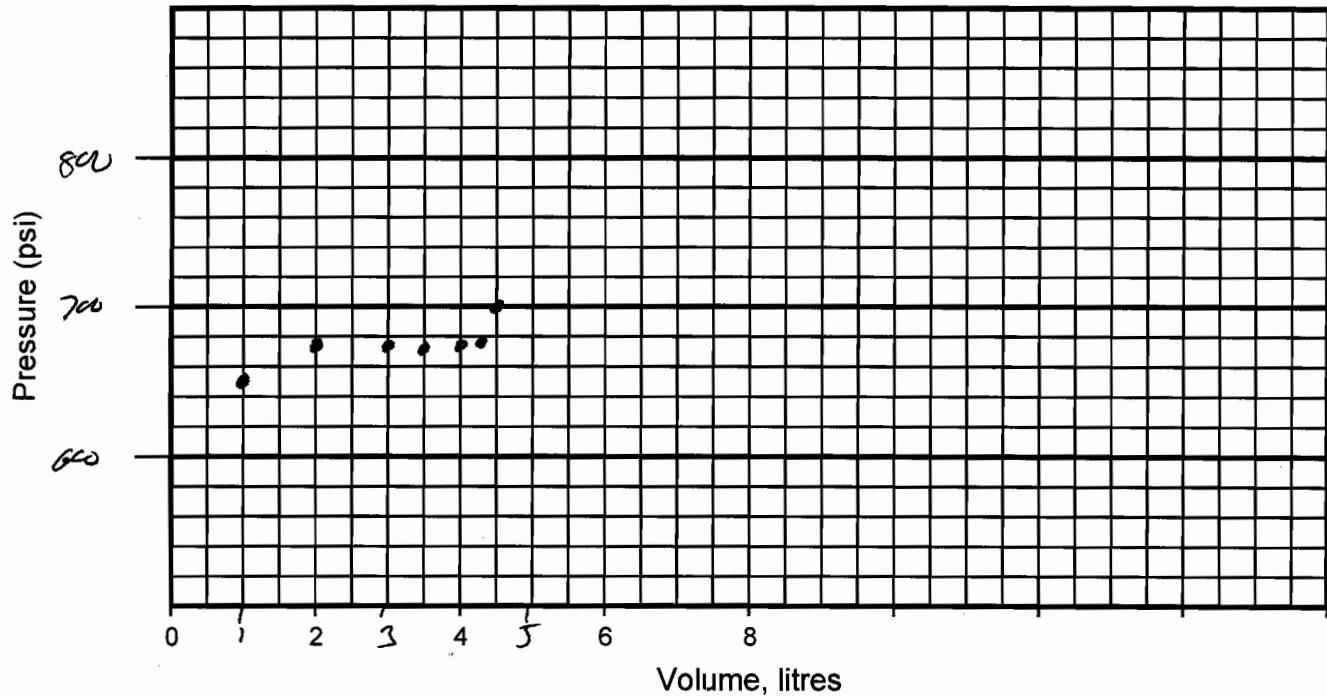
Packer No. 10 Depth (ft / m): 355 Inflation Tool No.: TIW 1087

Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 450 psi

Borehole Water Level: 234 (ft / m) = 9.7 psi (P_W)

Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (L)	1.0	2.0	3.0	3.5	4.0	4.25	4.5	/	4.75	
PSI	650	678	675	675	675	675	700	/	650	



Comments: Packer # 10

Time - 11:44

Westbay Packer Inflation Record

Project: United -ok Roosevelt Field Project No.: F50754 Well No.: 50P-14

Location: Garden Rd. Completed by: GS Date Inflated: 8/11/11

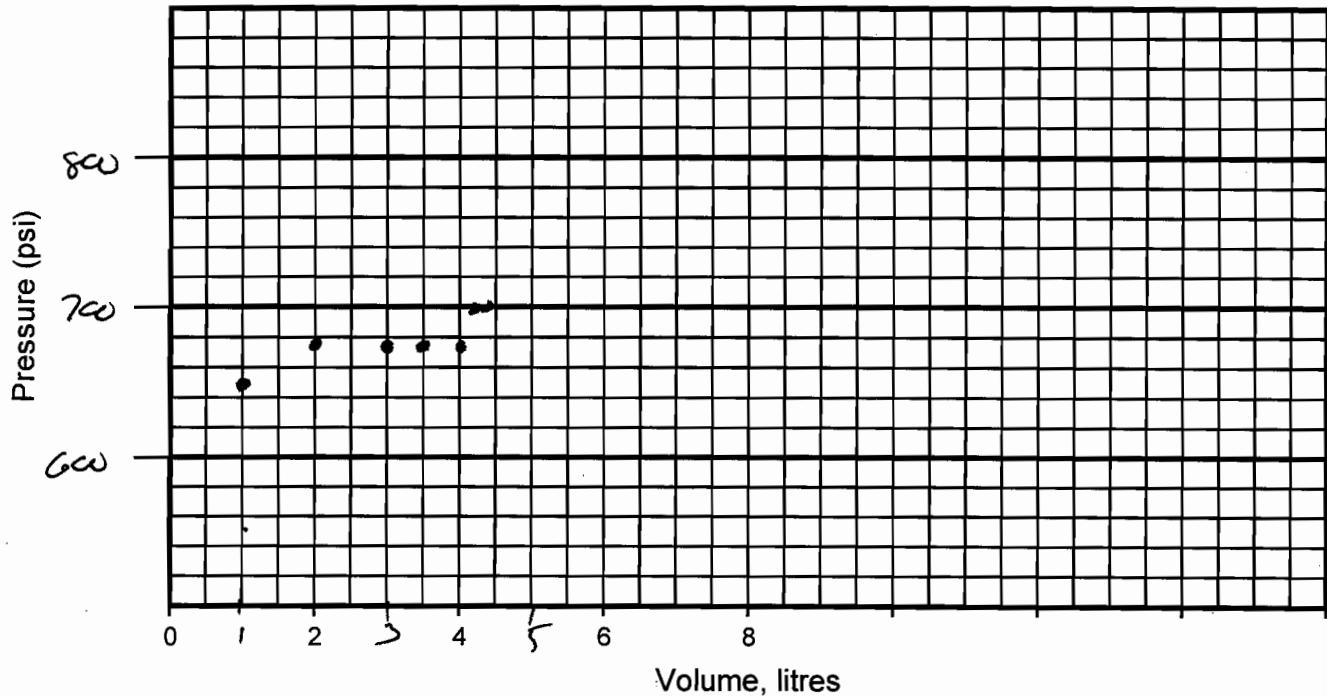
Packer No. 11 Depth (ft / m): 745 Inflation Tool No.: TW 107

Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 950 psi

Borehole Water Level: 22.4 (ft / m) = 9.7 psi (P_W)

Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (L)	10	2.0	3.0	35	4.0	725	4.45	/	9.25	
PSI	650	675	675	675	675	700	700	/	0	



Comments: Packer # 11

Time - 12:06

Westbay Packer Inflation Record

Project: Uniton - Old Roosevelt Field Project No.: F50754 Well No.: SUP-14

Location: Garden Road Completed by: GS Date Inflated: 8/11/11

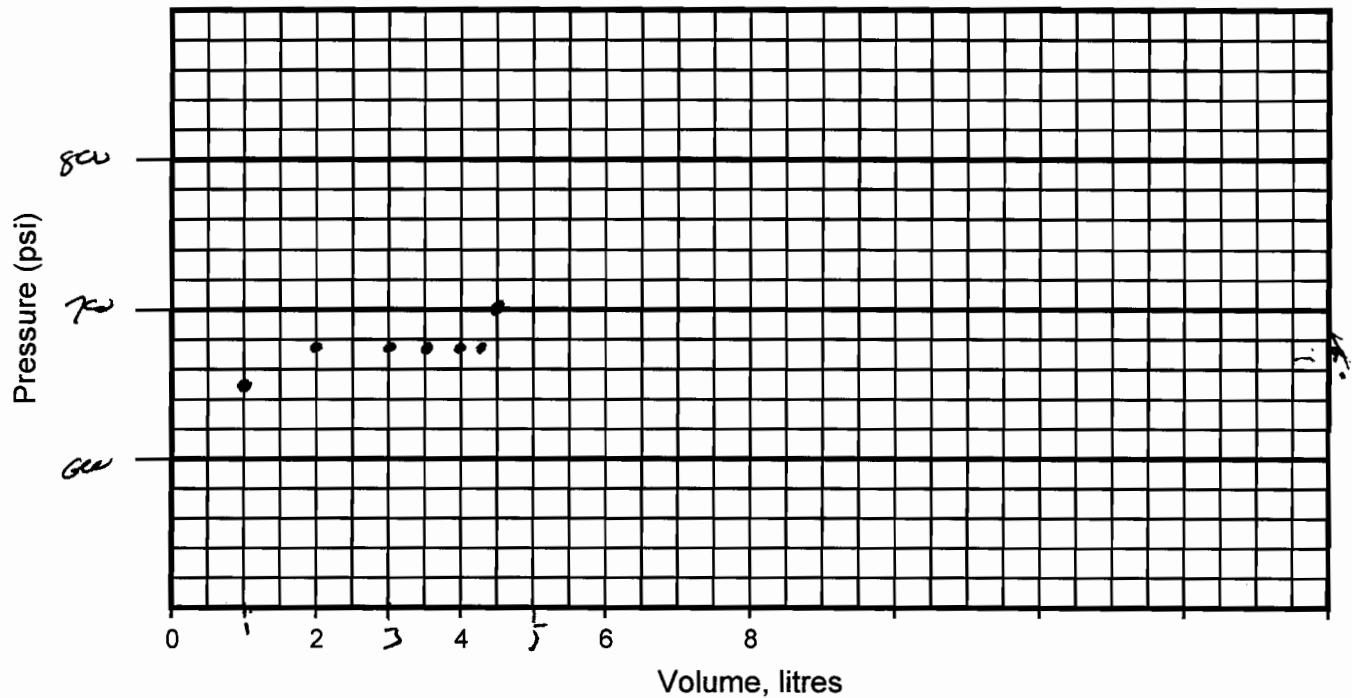
Packer No. 12 Depth (ft / m): 340 Inflation Tool No.: JW1087

Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 550 psi

Borehole Water Level: 22.4 (ft / m) = 9.7 psi (P_W)

Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T = \frac{115}{700}$ psi

Volume (c)	1.0	2.0	3.0	3.5	4.0	4.25	4.50	/	4.75	
PST	630	675	675	675	675	675	700	/	675	

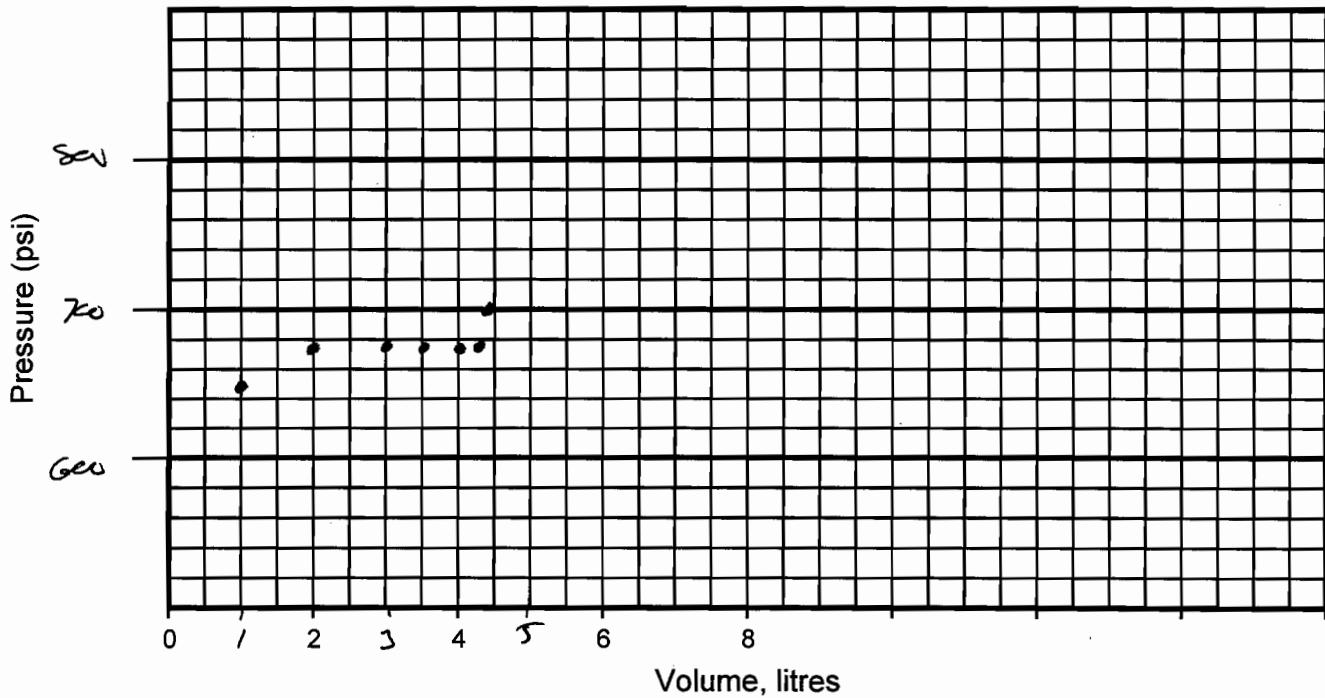


Comments: Packer # 12 Time - 10:00

Westbay Packer Inflation Record

Project: Unitech - Roosevelt Field Project No.: F50754 Well No.: SUP-14
 Location: Garden Rd Completed by: GS Date Inflated: 8/11/14
 Packer No. 13 Depth (ft/m): 295 Inflation Tool No.: TLW 1087
 Packer Valve Pressure, P_V : 150 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 450 psi
 Borehole Water Level: 2240 (ft/m) = 97 psi (P_W)
 Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 110 psi

Volume (l)	1.0	2.0	3.0	3.5	4.0	4.25	4.45	/	4.20	
PSI	650	675	675	675	675	675	700	/	Ø	



Comments: Packer # 13 Time - 10:40

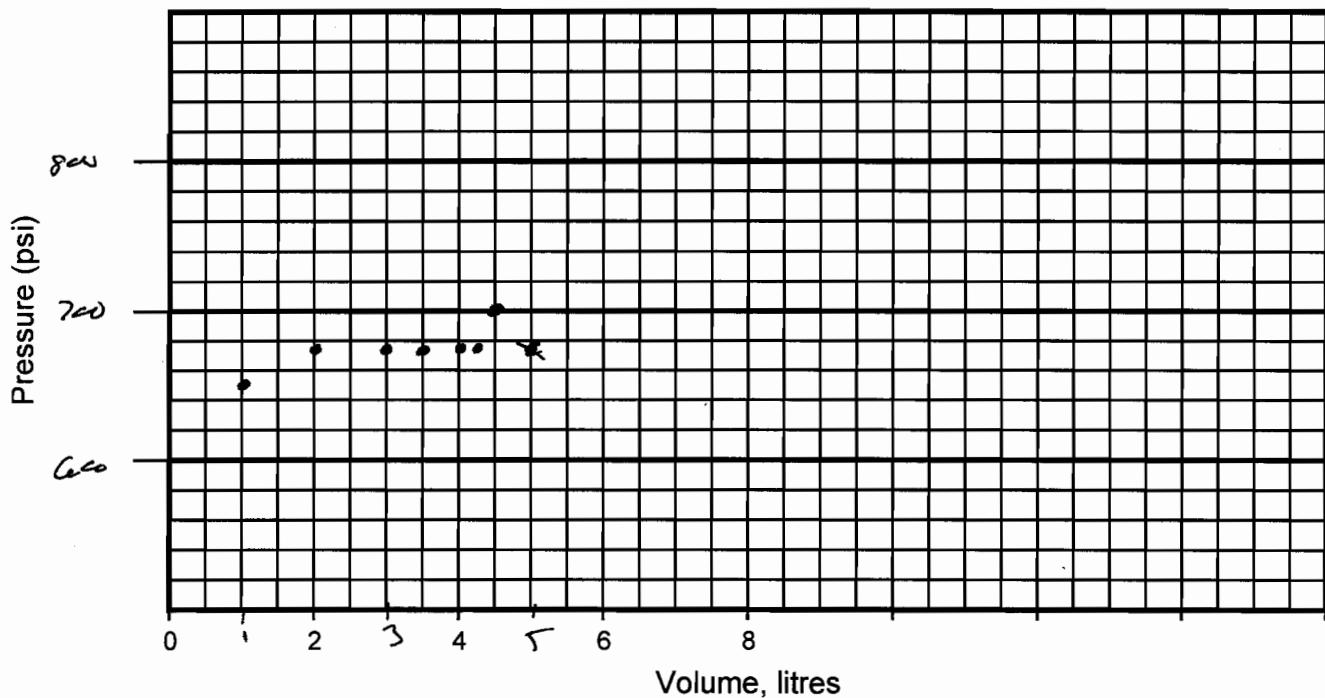


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Westbay Packer Inflation Record

Project: Untech-08 Roosevelt Field Project No.: P50754 Well No.: SUP-14
Location: Garden Rd. Completed by: CS Date Inflated: 8/11/11
Packer No. 14 Depth (ft / m): 285 Inflation Tool No.: TIW 108
Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 200 psi Tool Pressure, P_T : 460 psi
Borehole Water Level: 22.40 (ft / m) = 97 psi (P_W)
Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (c)	1.0	2.0	3.0	3.5	4.0	4.25	4.50	/	4.75	
PSI	670	675	675	675	670	678	700	/	675	

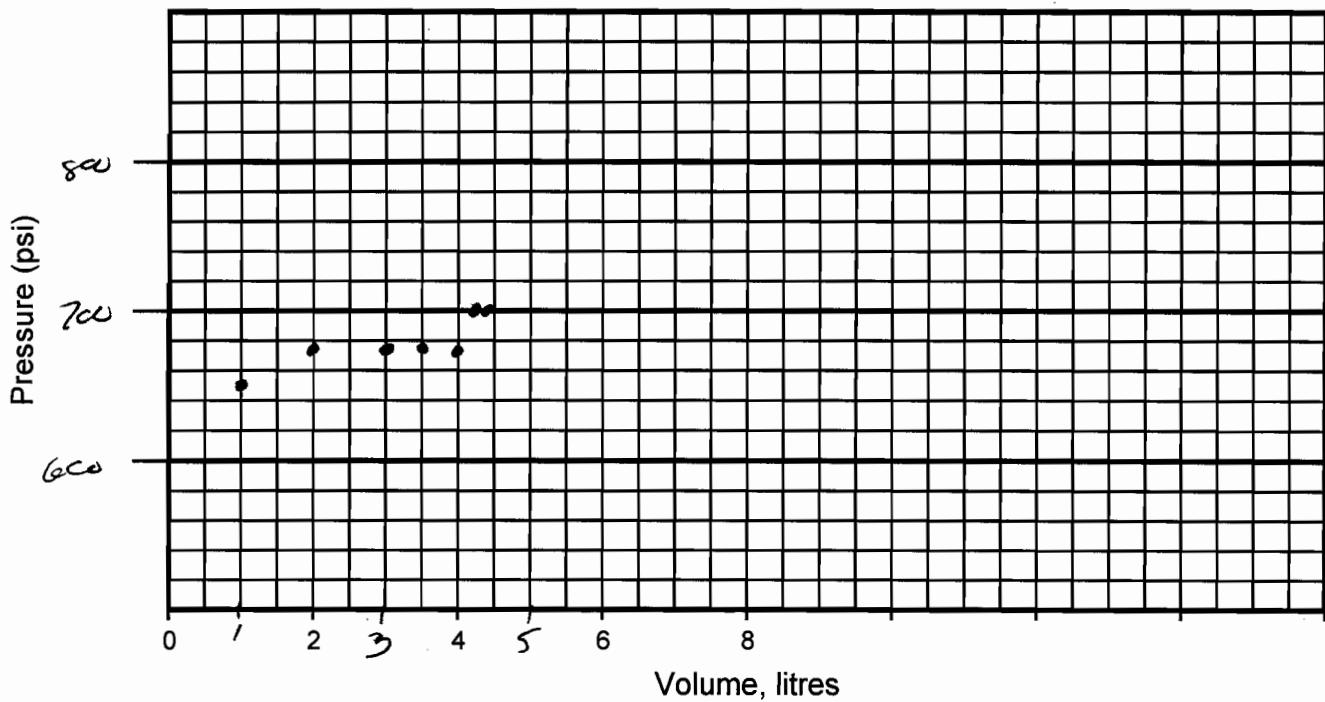


Comments: Packer # 14 Time - 12:56

Westbay Packer Inflation Record

Project: OnTech - Old Roosevelt Field Project No.: F80754 Well No.: 5CP-14
 Location: Garden RL Completed by: CS Date Inflated: 8/1/11
 Packer No. 15 Depth (ft / m): 200 Inflation Tool No.: TIW 1087
 Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 450 psi
 Borehole Water Level: 224.6 (ft / m) = 97 psi (P_W)
 Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 15 psi

Volume (L)	1.0	2.0	3.0	3.5	4.0	4.25	4.40	/	4.20	
PSI	650	675	675	675	675	700	700	/	650	



Comments: Packer # 15 Time - 13:10

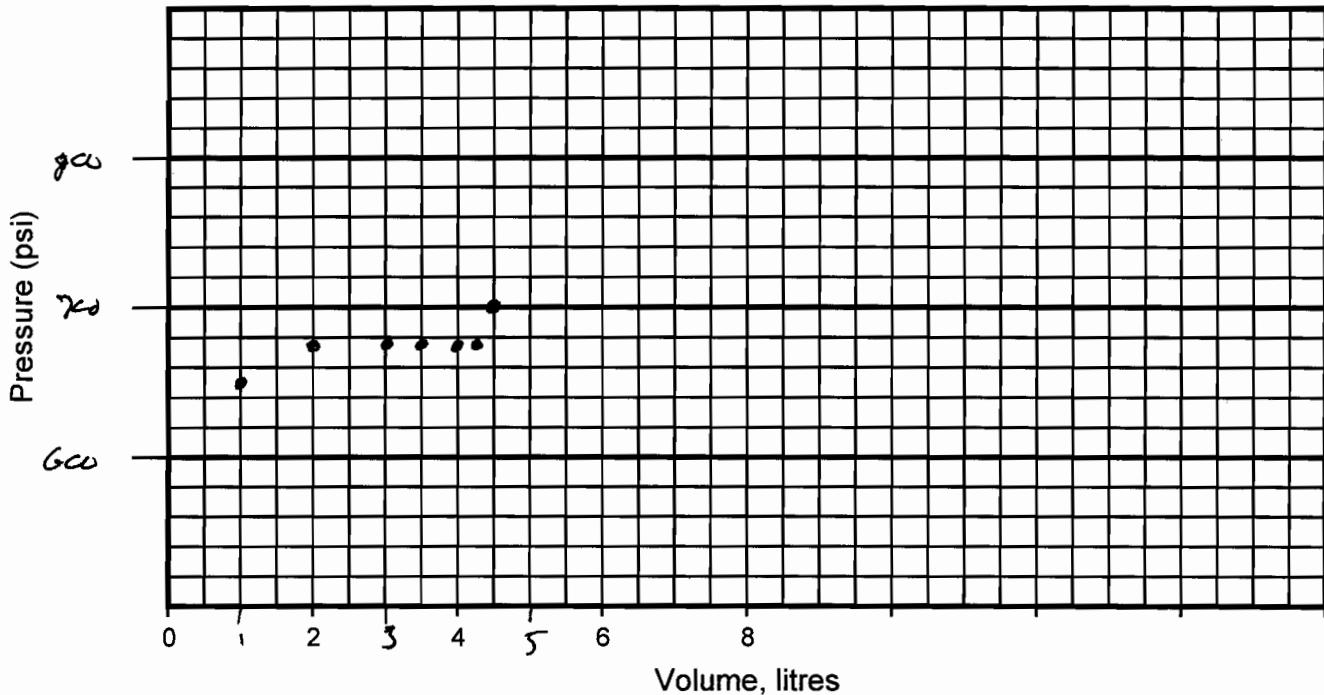


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Westbay Packer Inflation Record

Project: United - Old Rorrell Fk Project No.: F50754 Well No.: SUP-14
Location: Garden Rd Completed by: CS Date Inflated: 8/6/6
Packer No. 16 Depth (ft / m): 295 Inflation Tool No.: JLW 1037
Packer Valve Pressure, P_V : 150 psi Final Line Pressure, P_L : _____ psi Tool Pressure, P_T : 450 psi
Borehole Water Level: 22.40 (ft / m) = 97 psi (P_W)
Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 110 psi

Volume (L)	1.0	2.0	3.0	3.5	4.0	4.25	8.5	/	4.25	
PSI	680	675	675	675	675	675	700	/	6	

Comments: Packer # 16Time - 13:32

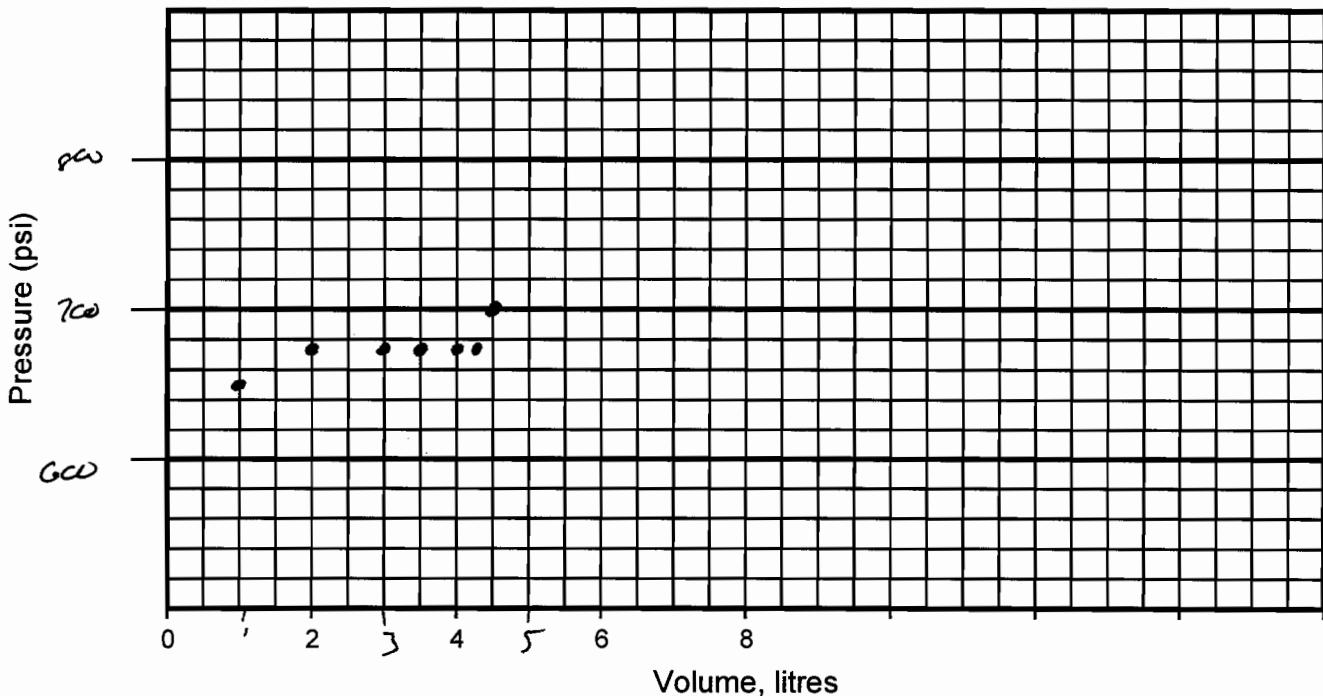


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Westbay Packer Inflation Record

Project: Untech - Old Roosevelt Field Project No.: FS0754 Well No.: SUP-14
Location: Carky Rd. Completed by: GS Date Inflated: 21/11/11
Packer No. 17 Depth (ft / m): 235 Inflation Tool No.: TW 1087
Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 450 psi
Borehole Water Level: 22.40 (ft / m) = 9.7 psi (P_W)
Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (L)	1.0	2.0	3.0	3.5	4.0	4.25	4.50	/	4.25	
PSI	650	675	675	675	675	675	700	/	Ø	

Comments: Packer # 17 Time - 13:53

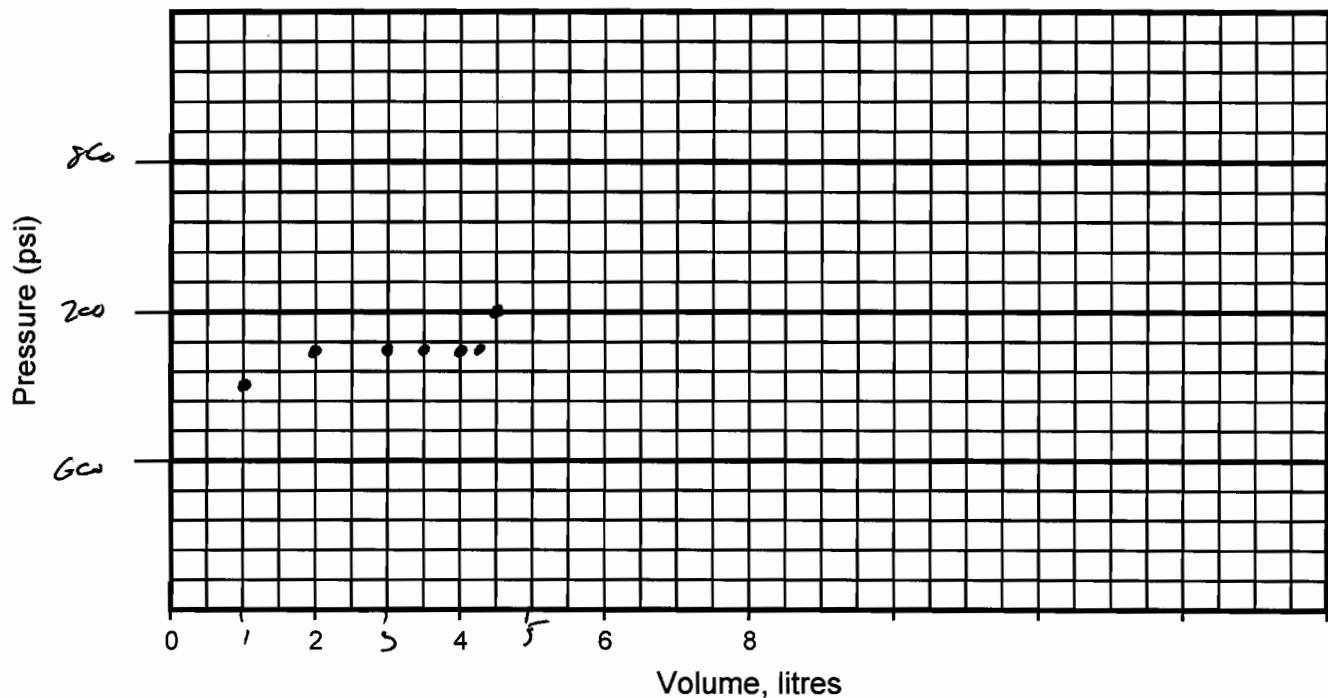


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Westbay Packer Inflation Record

Project: Unitest - 012 Roosevelt Fick Project No.: F50254 Well No.: SUP-14
Location: Garden Rd. Completed by: GS Date Inflated: 8/11/11
Packer No. 18 Depth (ft / m): 195 Inflation Tool No.: Tlw 107
Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : psi Tool Pressure, P_T : 450 psi
Borehole Water Level: 2240 (ft / m) = 97 psi (P_W)
Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (L)	1.0	2.0	3.0	3.5	4.0	4.25	4.50	/	4.25	
PSI	650	675	675	675	675	675	700	/	0	

Comments: Packer # 18Time - 14:10

Westbay Packer Inflation Record

Project: Untech - OH Roosevelt Field Project No.: F50754 Well No.: SUP-14

Location: Corden Rd. Completed by: CS Date Inflated: 8/11/11

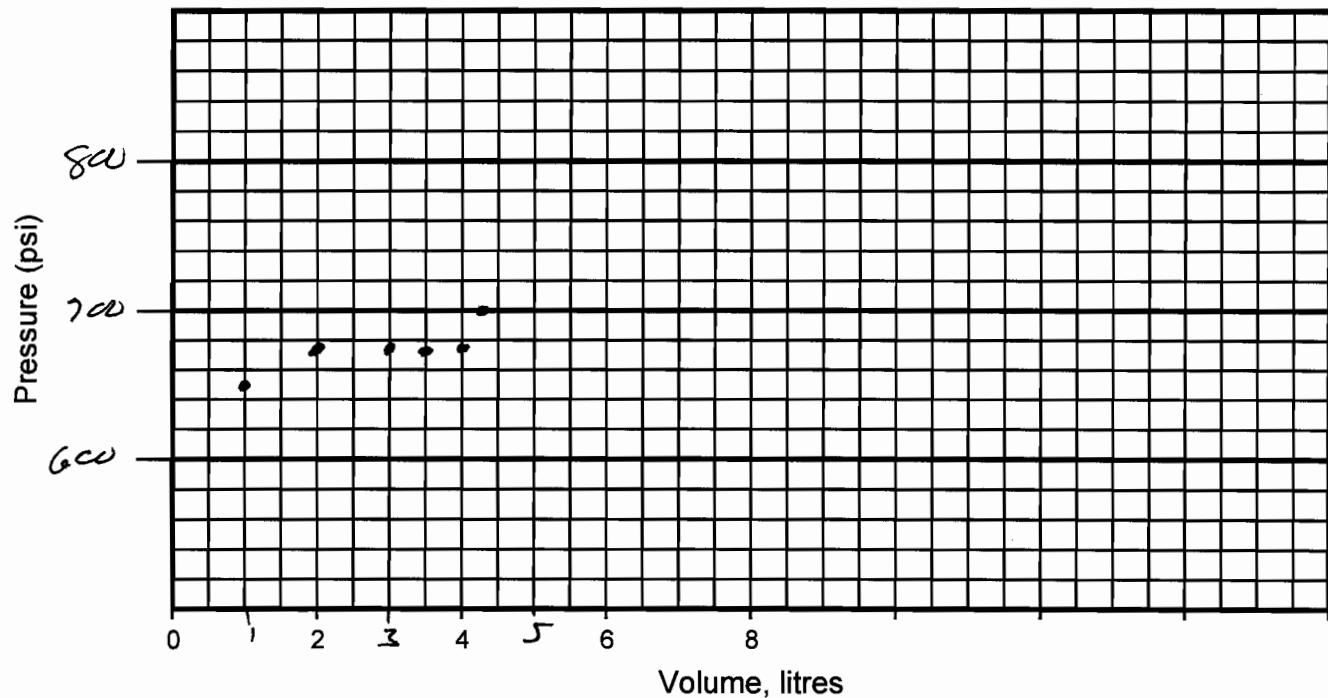
Packer No. 19 Depth (ft / m): 180 Inflation Tool No.: TIW 1087

Packer Valve Pressure, P_V : 140 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 450 psi

Borehole Water Level: 22.40 (ft / m) = 17 psi (P_W)

Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 120 psi

Volume (L)	10	20	30	25	90	40	440	/	415	
PSI	650	675	675	675	675	700	700	/	6	



Comments: Packer # 19

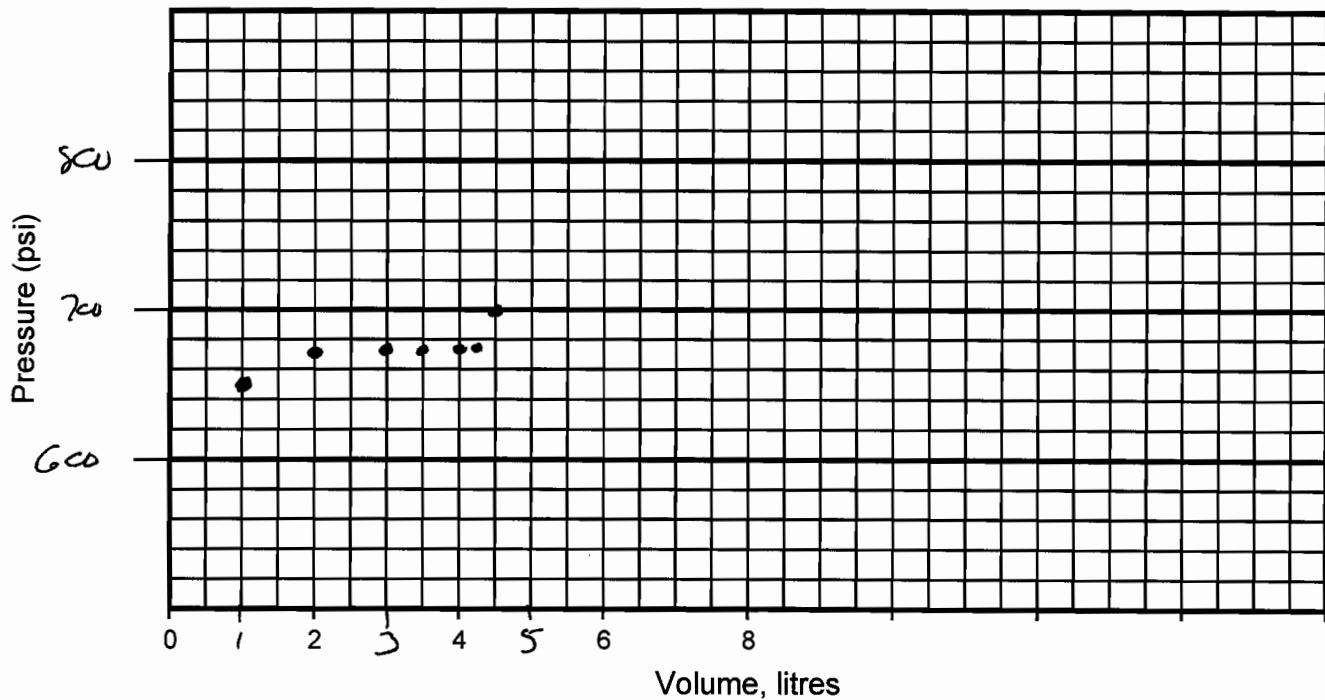
Time - 14:25

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Westbay Packer Inflation Record

Project: Unitek Old Russell Fick Project No.: B30754 Well No.: SUP-14Location: Gordon Rd Completed by: GS Date Inflated: 8/4/14Packer No. 20 Depth (ft / m): 170 Inflation Tool No.: 712108Packer Valve Pressure, P_V : 140 psi Final Line Pressure, P_L : psi Tool Pressure, P_T : 450 psiBorehole Water Level: 22.40 (ft / m) = 77 psi (P_W)Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 120 psi

Volume (c)	1.0	20	30	35	40	420	45	/	425
PSI	600	675	675	675	675	675	700	/	Ø

Comments: Packer # 20Time - 14:52

Westbay Packer Inflation Record

Project: Untech - Old Roosevelt Field Project No.: F80754 Well No.: SUPA 14

Location: Garden Rd Completed by: CS Date Inflated: 8/1/11

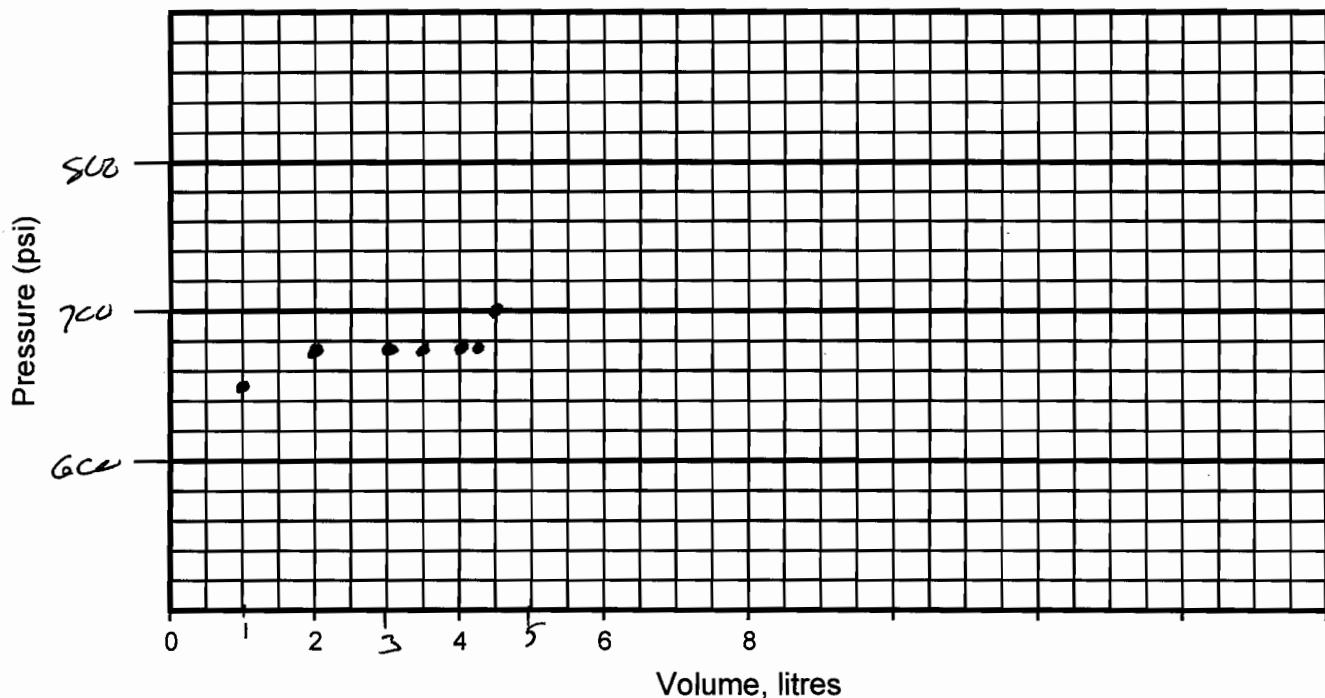
Packer No. 21 Depth (ft / m): 155 Inflation Tool No.: T/W 1087

Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 650 psi

Borehole Water Level: 2240 (ft / m) = 9.7 psi (P_W)

Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (L)	10	20	30	35	40	425	450	/	9.25	
PSI	650	675	675	675	675	675	700	/	Ø	



Comments: Packer # 21

Time - 15:08

Westbay Packer Inflation Record

Project: Unitah - Old Roosevelt Field Project No.: F50754 Well No.: SUP-14

Location: Garden Rd. Completed by: GS Date Inflated: 8/11/11

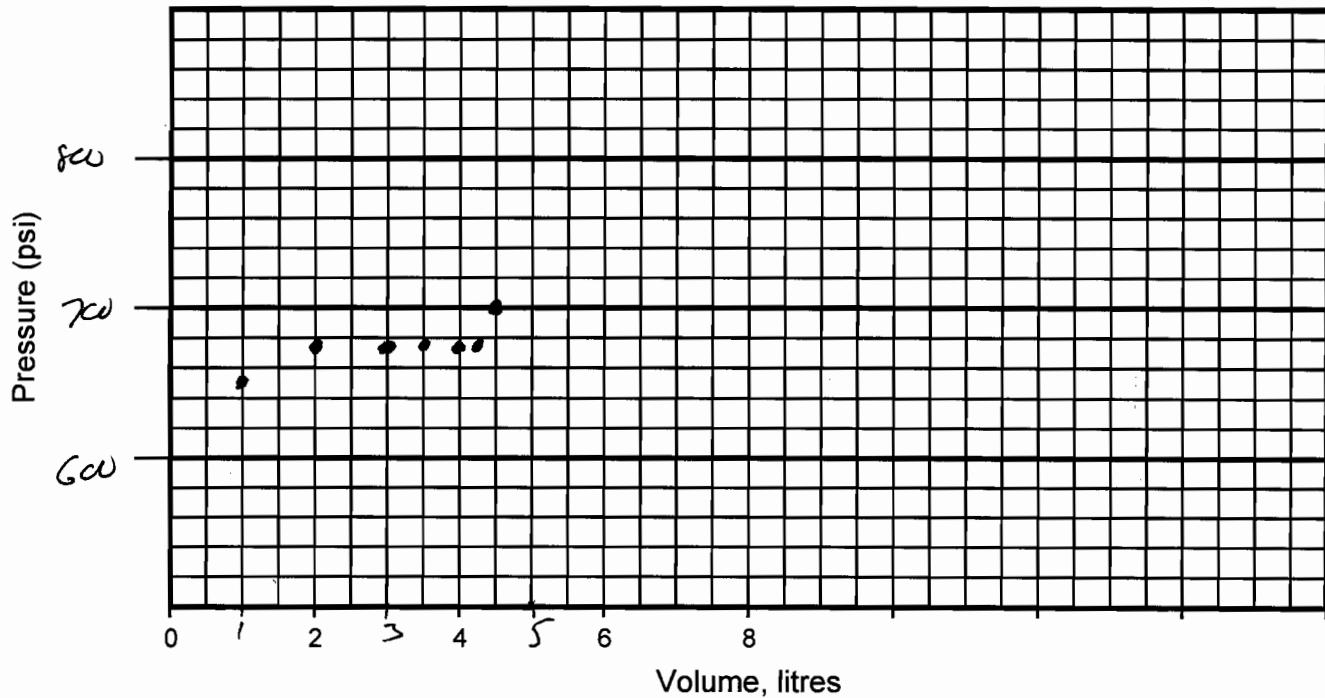
Packer No. 22 Depth (ft / m): 140 Inflation Tool No.: TWS 1087

Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 450 psi

Borehole Water Level: 22.41 (ft / m) = 9.7 psi (P_W)

Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (l)	1.0	2.0	2.0	3.5	4.0	4.25	4.50	/	4.25	
PSI	680	675	675	675	675	675	700	/	6	



Comments: Packer # 22

Time - 15:23

Westbay Packer Inflation Record

Project: Unitech - Old Roosevelt Fick Project No.: F50754 Well No.: SUP-14

Location: Garden Rd. Completed by: CS Date Inflated: 8/11/61

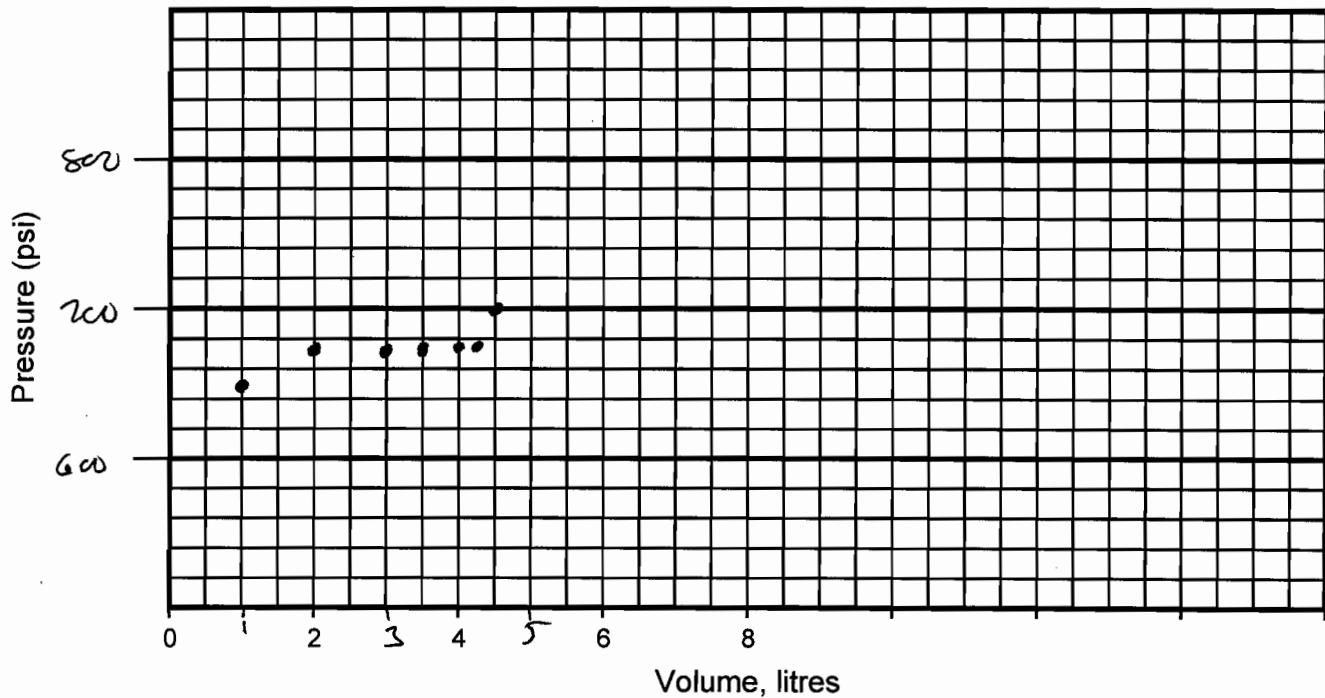
Packer No. 23 Depth (ft / m): 130 Inflation Tool No.: TIW 1017

Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 610 psi

Borehole Water Level: 22.40 (ft / m) = 9.7 psi (P_W)

Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T = 115$ psi

Volume (c)	1.0	2.0	3.0	3.5	4.0	4.5	5.0	5.5	6.0	7.0	8.0
PSI	650	675	675	675	675	675	700	700	700	700	700



Comments: Packer # 23

Time - 15:38

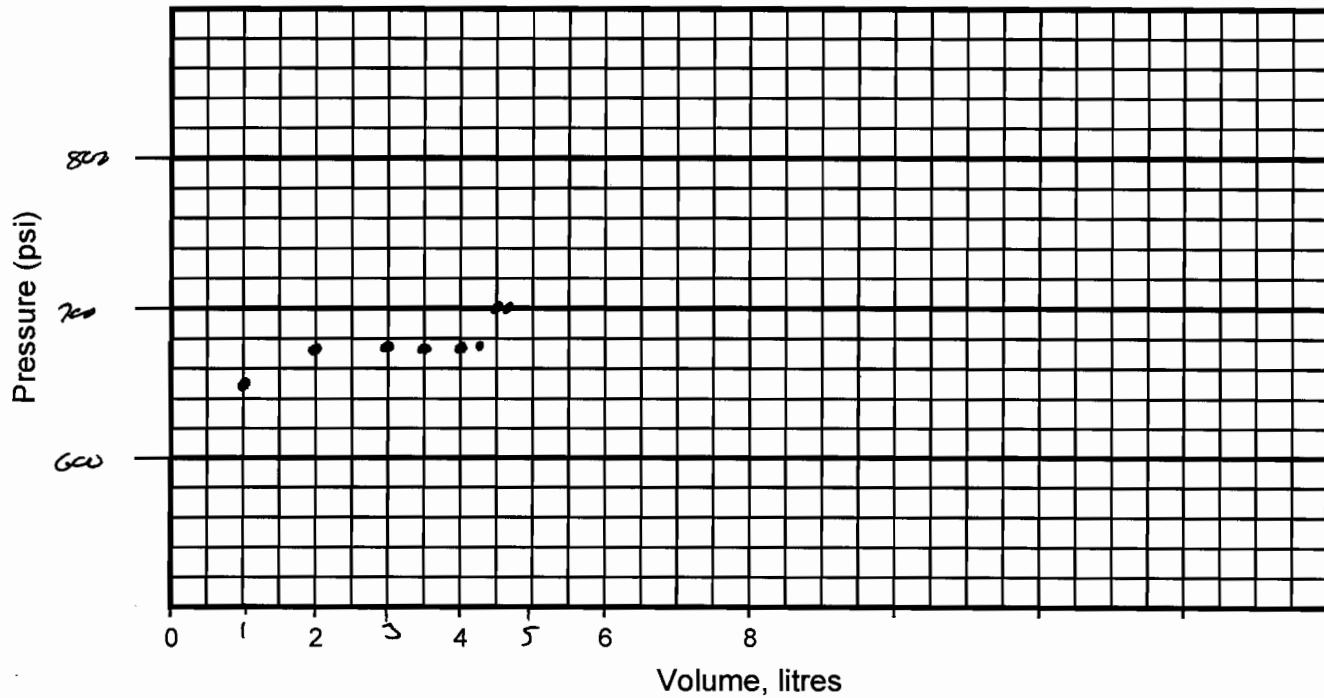


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Westbay Packer Inflation Record

Project: Unitech - Old Roosevelt Field Project No.: P80754 Well No.: SUP-14Location: Garden Rd Completed by: GS Date Inflated: 5/11/11Packer No. 24 Depth (ft / m): 110 Inflation Tool No.: TIW 1087Packer Valve Pressure, P_V : 140 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 450 psiBorehole Water Level: 2240 (ft / m) = 9.7 psi (P_W)Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T = 120$ psi

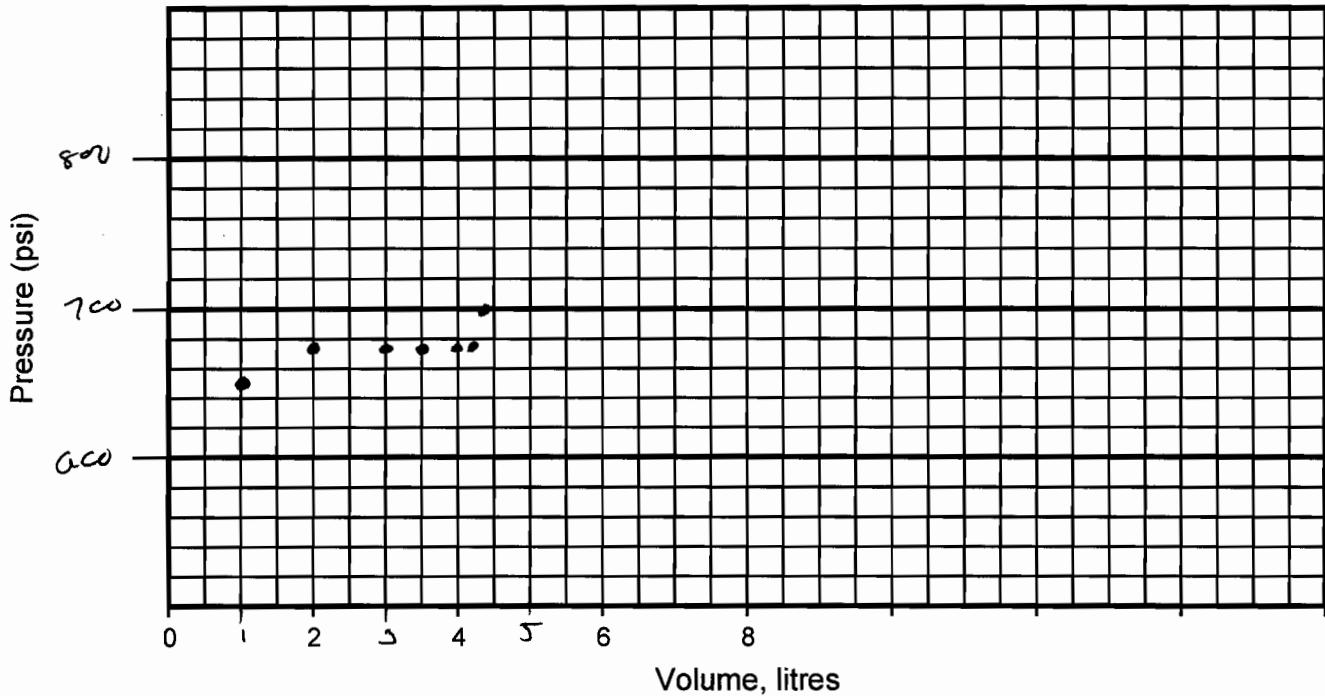
Volume (L)	10	2.0	3.0	3.5	4.0	4.25	4.50	4.65	/	
P_{EE}	450	675	675	675	675	675	700	700	/	0

Comments: Packer # 24 Time - 15:54

Westbay Packer Inflation Record

Project: Unitech - Old Rossland Field Project No.: F80754 Well No.: SUP-14
 Location: Garden Rd. Completed by: GS Date Inflated: 8/11/11
 Packer No. 25 Depth (ft / m): 95 Inflation Tool No.: 776 1087
 Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 980 psi
 Borehole Water Level: 2240 (ft / m) = 97 psi (P_W)
 Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (c)	1.0	2.0	3.0	3.5	4.0	4.25	4.50	/	4.70	
PSI	650	675	675	675	675	675	700	/	6	



Comments: Packer # 25 Time - 16:09



Schlumberger
WATER SERVICES

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Westbay Packer Inflation Record

Project: Unteh-Roosevelt Field Project No.: P50754 Well No.: SUP-14

Location: Garden Rd. Completed by: C8 Date Inflated: 8/4/11

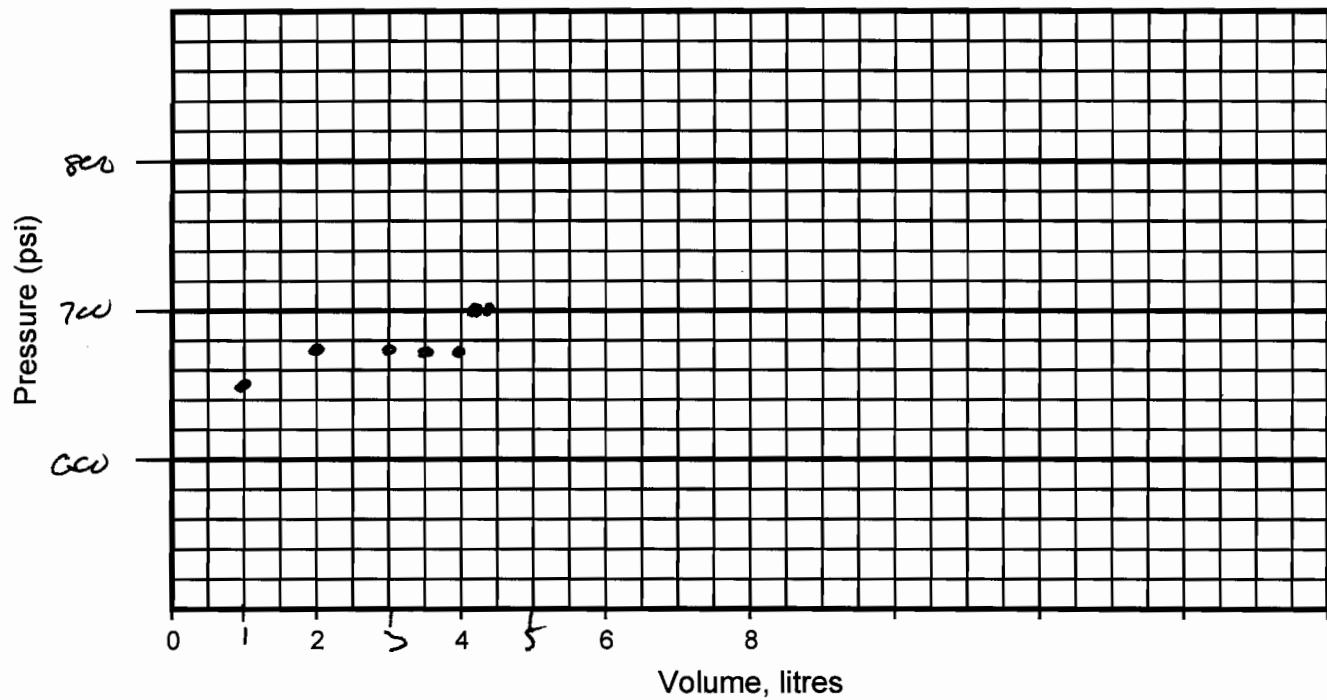
Packer No. 2C Depth (ft / m): 80 Inflation Tool No.: 77W1087

Packer Valve Pressure, P_V : 150 psi Final Line Pressure, P_L : 700 psi Tool Pressure, P_T : 400 psi

Borehole Water Level: 3240 (ft / m) = 97 psi (P_W)

Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 110 psi

Volume (c)	10	20	30	35	40	425	435	/	415	
P_{EI}	680	675	675	675	675	700	700	/	68	



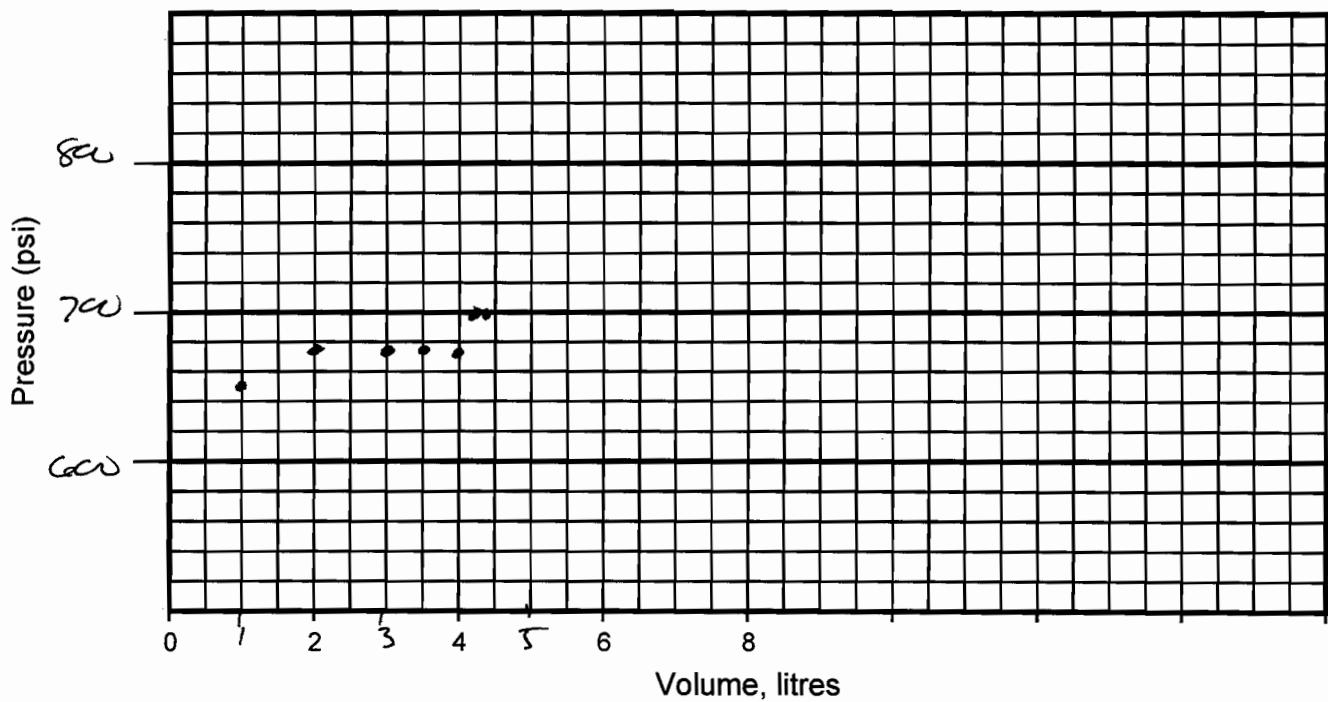
Comments: Packer # 2C

Time - 16:24

Westbay Packer Inflation Record

Project: Unitech-Roosevelt Field Project No.: F50754 Well No.: SUP-14
 Location: Garden Rd. Completed by: G8 Date Inflated: 8/11/11
 Packer No. 27 Depth (ft / m): 70 Inflation Tool No.: 714 1087
 Packer Valve Pressure, P_V : 145 psi Final Line Pressure, P_L : _____ psi Tool Pressure, P_T : 480 psi
 Borehole Water Level: 224 (ft / m) = 97 psi (P_W)
 Calculated Packer Element Pressure, $P_E = P_L + P_W - P_V - P_T =$ 115 psi

Volume (L)	10	20	30	35	40	425	440	/	4.15	
PSI	650	675	678	675	675	700	700	/	68	



Comments: Packer # 27

Time - 16:40

Appendix E

Westbay Groundwater Sampling Forms



Westbay Piezometric Pressures/Levels

Field Data and Calculation Sheet

Field Data and Calculation Sheet

59-2

Datum:

Elev G.S.

ANSWER: C:D:E

above G.3..

ay Casing: _____

Elevation: _____

ole angle: _____

卷之三

boreholes refer to position along drillhole

Probe Type: SNS
Serial No.: 1761
Probe Range: 250 ps
Westbay Casing Type: MPP38

Note: "Port position" in angled boreholes refer to position along drillhole. True depth (Dp) needs to be calculated using borehole angle and deviation data to calculate zone piezometric level (D2).

Port No.	Port Position From Log ()	Port Position From Cable ()	True Port Depth "Dp" ()	Fluid Pressure Readings			Probe Temp. (°C)	Time H:M:S	Pressure Head Outside Port ()	Piez. Level Outside Port ()	Comments
				Inside Casing (P1)	Outside Casing (P2)	Inside Casing (P1)					
1	450			196.94	196.86	196.94		15:37			
2	413			180.91	180.90	180.96		15:41			
3	373			163.74	163.66	163.74		15:42			
4	333			146.40	146.39	146.49		15:51			
5	293			129.10	129.11	129.10		15:53			
6	253			111.81	111.84	111.81		15:57			
7	193			85.87	85.95	85.86		15:56			
8	153			68.56	68.71	68.55		15:58			
9	103			46.91	47.13	46.99		15:59			
10	53			25.21	25.43	25.21		16:01			

Notes: $w = 0.433 \text{ psi} / \text{ft}$ (1.422 psi/m) of H_2O
 H = pressure head of water in zone

P_{atm} = atmospheric pressure

D_z = piezometric level in zone
D_p = true depth of measurement point

WB: 08.88, TDR 21

Answer : When measuring for a



Westbay Piezometric Pressures/Levels

Field Data and Calculation Sheet

Well No.: SVP-5

Datum: _____

Elev. G.S.: _____

Height of Westbay above G.S.: _____

Elev. top of Westbay Casing: _____

Reference Elevation: _____

Borehole angle: _____

Probe Type: EPM5

Serial No.: 1761

Probe Range: 200 PSI

Westbay Casing Type: MP38

Date: Sept 8 2011
 Client: EA
 Job No.: 1761
 Location: ROOSEVELT
 Weather: Partly Cloudy
 Operator: Eric & Ace

Note: "Port position" in angled boreholes refer to position along drillhole. True depth (Dp) needs to be calculated using borehole angle and deviation data to calculate zone piezometric level (Dz).

Ambient Reading (P_{atm}) (pressure, temperature, time)
 Start: 14.70 Finish: 14.77
 P_{atm} 14.70 psi
 7:25

Port No.	Port Position From Log ()	Port Position From Cable ()	True Port Depth "Dp" ()	Fluid Pressure Readings			Probe Temp. (°C)	Time H:M:S	Pressure Head Outside Port ()	Piez. Level Outside Port ()	Comments
				Inside Casing (P1)	Outside Casing (P2)	Inside Casing (P1)			H = (P2-Patm)/w		
1	1430		187.65	89.65	187.69	187.69	7.39				
2	409		178.08	178.99	178.08	178.99	7.33				
3	358		156.27	158.35	156.27	158.35	7.33				
4	313		136.82	138.98	136.83	138.98	7.34				
5	293		128.15	130.45	128.15	130.45	7.36				
6	253		110.78	113.30	110.79	113.30	7.33				
7	193		84.73	87.89	84.73	87.89	7.40				
8	153		67.34	70.82	67.33	70.82	7.43				
9	93		42.41	47.21	42.41	47.21	7.43				
10	49		21.63	23.59	21.63	23.59	7.44				

Notes:

w = 0.433 psi / ft (1422psi/m) of H₂O
 H = pressure head of water in zone

Dz = piezometric level in zone

Dp = true depth of measurement port

DW Inside WBC 34-72' (Top 40') Annule: 24.5' (Top 41')



Westbay Piezometric Pressures/Levels

Field Data and Calculation Sheet

Field Data and Calculation Sheet

5VP-7

Well No.: 20P-

Datum:

Eleven G.S.

1000

100

— 10 —

Elevation: —

Borehole angle:

1

Probe Type: MS

Serial No.: 176

Score Range: 750-850

MP38

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Note: "Port position" in angled boreholes refer to position along drillhole. True depth (D_p) needs to be calculated using borehole angle and deviation data to calculate zone planimetric level (D_z).

Notes: $w = 0.433 \text{ psi/ft} (1.422 \text{ psi/m})$ of H_2O

Patm = atmospheric pressure

D_z = piezometric level in zone

W13: 35.08 (TDP 3°) Annals: 29: 47 (TDP 4°)



Westbay Piezometric Pressures/Levels

Field Data and Calculation Sheet

Field Data and Calculation Sheet

SVP-8

Well No.:

Datum:

Elev. G.S.: Height of Westbay above G.S.:

Elev. top of Westbay Casing:

Sole anal.

Probe Type: LMS
Serial No.: 1767
Probe Range: 250
Westbay Casing Type: MP38

BUREAU OF ARYIE.

Note: "Port position" in angled boreholes refer to position along drillhole. True depth (Dp) needs to be calculated using borehole angle and deviation data to calculate zone piezometric level (Dz).

Date: Sept 7, 2011
Client: EPA
Job No.:
Location: ROOSEVELT
Weather: partly cloudy
Operator: HOLME & SIE

Ambient Reading (P_{atm}) [pressure, temperature, time]
 Start: 14.73 Finish: 14.73
 P_{atm} 14.73 psi

Port No.	Port Position From Log ()	Port Position From Cable ()	True Port Depth "Dp" ()	Fluid Pressure Readings			Probe Temp. (°C)	Time H:M:S	Pressure Head Outside Port ()	Piez. Level Outside Port ()	Comments
				Inside Casing (P1)	Outside Casing (P2)	Inside Casing (P1)					
1	435			195.39	195.74	195.39	149				
2	323			168.49	169.51	168.49	143				
3	238			109.83	112.42	109.83	143				
4	153			75.10	79.04	75.10	1435				
5	103			51.30	55.49	51.30	1437				
6	48			37.26	31.61	37.26	1438				

Notes:
 $w = 0.433 \text{ psi / ft} (1.422 \text{ psi/m}) \text{ of H}_2\text{O}$
 $H = \text{pressure head of water in zone}$

P_{atm} = atmospheric pressure

D_z = piezometric level in zone
D_p = true depth of measurement port

WB: 91.39' (Top of Annular; 10.83' HDP 4m)



Westbay Piezometric Pressures/Levels

Field Data and Calculation Sheet

Field Data and Calculation Sheet

Well No.: SWP-10
 Datum: _____
 Elev. G.S.: _____
 Height of Westbay above G.S.: _____
 Elev. top of Westbay Casing: _____
 Reference Elevation: _____
 Borehole angle: _____

Probe Type: Sinus
Serial No.: 761
Probe Range: 250 ps
Westbay Casing Type: MP38

Note: "Port position" in angled boreholes refer to position along drillhole. True depth (D_p) needs to be calculated using borehole angle and deviation data to calculate zone piezometric level (D_2).

Date: Sept. 7, 2011
Client: EPA
Job No.:
Location: Roselle, IL
Weather: Sunny
Operator: Mike J SE

Probe Type: SiNS
Serial No.: 1761
Probe Range: 250 ps
Way Casing Type: MP38

Ambient Reading (P_{atm}) (pressure, temperature, time)
 Start: 14.72 Finish: 14.73
 P_{atm} 14.73 psi
 1219

Port No.	Port Position From Log ()	Port Position From Cable ()	True Port Depth "Dp" ()	Fluid Pressure Readings			Probe Temp. (°C)	Time H:M:S	Pressure Head Outside Port ()	Piez. Level Outside Port ()	Comments
				Inside Casing (P1)	Outside Casing (P2)	Inside Casing (P1)					
1	432		30967	31048	30968		18.14				
2	402		174.88	175.68	174.89		12:17				
3	352		153.16	154.21	153.16		12:16				
4	307		135.59	134.77	133.59		12:21				
5	287		104.99	106.16	104.91		12:20				
6	247		107.52	109.20	107.52		12:24				
7	107		81.44	83.62	81.44		12:26				
8	147		64.04	66.75	64.04		12:28				
9	102		44.44	47.36	44.44		12:30				
10	47		30.46	33.51	30.46		12:30				

Notes: $w = 0.433 \text{ psi/ft} (1.422 \text{ psi/m}) \text{ of H}_2\text{O}$
 $U = \text{unconfined bond of water in zone}$

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D_z = piezometric level in zone

12⁵ Gyr - (W)19: 26.77 * From
Annular = 26.69' (1084') Since Close
Gyr + = 111721 26.73 Too 123.08
n = atmospheric pressure



Westbay Piezometric Pressures/Levels

Field Data and Calculation Sheet

Well No.: 5WP-11
 Datum: _____
 Elev. G.S.: _____
 Height of Westbay above G.S.: _____
 Elev. top of Westbay Casing: _____
 Reference Elevation: _____
 Borehole angle: _____

Probe Type:

5WP

Serial No.:

701

Probe Range:

350 psi

Westbay Casing Type:

MP38

Date: Sept. 7, 2011
 Client: EPA
 Job No.: _____
 Location: ROOSEVELT
 Weather: sunny
 Operator: Mike SE

Note: "Port position" in angled boreholes refer to position along drillhole. True depth (Dp) needs to be calculated using borehole angle and deviation data to calculate zone piezometric level (Dz).

Ambient Reading (P_{atm}) (pressure, temperature, time)
 Start: 14.7 Finish: 14.7
 P_{atm} 14.7 psi
 1616

Port No.	Port Position From Log ()	Port Position From Cable ()	True Port Depth 'Dp' ()	Fluid Pressure Readings	Probe Temp. (°C)	Time H:M:S	Pressure Head Outside Port ()	Piez. Level Outside Port ()	Comments
				Inside Casing (P1) Outside Casing (P2)			H = (P2-Patm)/w	Dz = Dp - H	
1	432		218.78	219.66	219.79	16:22			② REVERSE BLOWED SHOE
2	402		173.18	178.20					
3	352		156.43	156.83	156.59	16:41			
4	307		157.43	137.32	137.32				
5	287		181.08	181.12	180.96	17:36			
6	247		111.79	111.85	111.76	17:37			
7	187		85.92	86.04	85.79	17:45			
8	147		68.49	69.64	68.49	17:24			
9	102		48.86	50.16	48.86	17:25			
10	47		25.01	26.46	25.00	17:23			
1			213.09	212.76	213.15	16:36	813.41	813.43	13:30 +7:43
2			178.51	178.20	178.51	16:39	178.77	178.75	17:34 178.85
3			152.6	152.6	152.6	17:04	157.12	17.51	157.25
4									157.19
									17:35 137.70
									137.70
									137.75

Notes:
 w = 0.433 psi/ ft (1.422psi/m) of H₂O
 Dz = piezometric level in zone
 H = pressure head of water in zone
 Dp = true depth of measurement port

Patm = atmospheric pressure

Annular: 10' inside 4'
 WD: 95.97 (108.2")

~~MS.~~ Mus. 135 : 1908 (DP 4)



Westbay Piezometric Pressures/Levels

Field Data and Calculation Sheet

Well No.:	SWP-12	Probe Type:	EWS
Datum:		Serial No.:	1761
Elev. G.S.:		Probe Range:	250 ft
Height of Westbay above G.S.:		Westbay Casing Type:	MP38
Elev. top of Westbay Casing:		Reference Elevation:	
Borehole angle:			

Note: "Port position" in angled boreholes refer to position along drillhole. True depth (D_p) needs to be calculated using borehole angle and deviation data to calculate zone piezometric level (D_z).
Erosion c. g.: _____

Date: Sept 8, 2011
Client: EPA
Job No.: ROOSEVELT
Location: Roswell
Weather: Partly Cloudy
Operator: NAME OF AE

Ambient Reading (P_{atm}) (pressure, temperature, time)
 Start: 14.70 Finish: 14.70
 P_{atm} 14.70 psi
 10:55

Port No.	Port Position From Log ()	Port Position From Cable ()	Fluid Pressure Readings			Probe Temp. (°C)	Time H:M:S	Pressure Head Outside Port ()	Piez. Level Outside Port ()	Comments
			True Port Depth "Dp" ()	Inside Casing (P1)	Outside Casing (P2)					
1	515		297.34	297.60	297.34		11:00			
2	485		314.30	314.82	314.30		11:02			
3	405		179.74	180.59	179.74		11:04			
4	355		158.10	159.37	158.10		11:06			
5	295		139.08	133.76	132.09		11:08			
6	245		110.38	113.18	110.39		11:09			

$w = 0.433 \text{ psi/ ft}$ (1.422 psi/m)

P_{atm} = atmospheric pressure

Dz = piezometric level in zone
 Dp = true depth of measurement port

Notes:

Amul : 13.78' (1004")
 W.D: 96.44' (1084")
 Dz = piezometric level in zone
 Dp = true depth of measurement point
 Parm = atmospheric pressure
 .422psi/m) of H₂O
 of water in zone



Westbay Piezometric Pressures/Levels

Field Data and Calculation Sheet

Well No.: SWP-13
 Datum: _____
 Elev. G.S.: _____
 Height of Westbay above G.S.: _____
 Elev. top of Westbay Casing: _____
 Reference Elevation: _____
 Borehole angle: _____

Probe Type: E42S
Serial No.: 1761
Probe Range: 2SD 9.5T
Westbay Casing Type: MP38

Borehole angle:

Note: "Port position" in angled boreholes refer to position along drillhole. True depth (D_p) needs to be calculated using borehole angle and deviation data to calculate zone piezometric level (D_z).

Date: Sept 8, 2011
Client: EP4
Job No.:
Location: ROOSEVELT
Weather: RUNS
Operator: MAGEE

Probe Type: EHS
Serial No.: 1761
Probe Range: 250 PSI
Casing Type: MP38

Ambient Reading (P_{atm}) (pressure, temperature, time)
 Start: 14.71 Finish: 14.71
 P_{atm} 14.71 psi
 10/19

Port No.	Port Position From Log ()	Port Position From Cable ()	True Port Depth "Dp" ()	Fluid Pressure Readings			Probe Temp. (°C)	Time H:M:S	Pressure Head Outside Port ()	Piez. Level Outside Port ()	Comments
				Inside Casing (P1)	Outside Casing (P2)	Inside Casing (P1)					
1	520		336.62	231.82	236.62		10:17				
2	485		221.37	216.67	221.28			10:30			
3	405		186.54	139.20	186.54				10:22		
4	355		164.79	160.62	164.78				10:24		
5	295		138.71	134.76	138.71				10:26		
6	245		116.97	113.75	116.98				10:28		

Notes:
 $w = 0.433 \text{ psi} / \text{ft}$ (1.422psi/m) of H₂O
 H = pressure head of water in zone

P_{atm} = atmospheric pressure

Dz = piezometric level in zone
 Dp = true depth of measurement point

Annals : Water top of ozone.

MW-35 80.44 (TOC 4")
MW-37 80.98 (TOC 4")

MW-32	-	31.11	.	Step 4"
MW-35	-	32.96	.	Step 4"
MW-37	-	37.46	.	Step 4"
MW-45	-	45.53	.	Step 4"
MW-47	-	47.38	.	Step 4"

Schlumberger
WATER SERVICES

Westbay Piezometric Pressures/Levels

Field Data and Calculation Sheet

Well No.: SWP-14
Datum: _____
Elev. G.S.: _____
Height of Westbay above G.S.: _____
Elev. top of Westbay Casing: _____
Reference Elevation: _____
Borehole angle: _____

Note: "Port position" in angled boreholes refer to position along drillhole. True depth (Dp) needs to be calculated using borehole angle and deviation data to calculate zone piezometric level (Dz).

Probe
Westbay Casir

Height of Westbay above G.S.: _____
Elev. top of Westbay Casing: _____
Reference Elevation: _____
Borehole angle: _____

Serial No.: 1461
Probe Range: 250 PSZ
Westbay Casing Type: MPP38

580

Date: Sept. 8, 2011
Client: EPA
Job No.: Roosevelt
Location: Kansas
Weather: Partly SC
Operator: STATE of SC

Ambient Reading (P_{atm}) (pressure, temperature, time)
 Start: 14.68 Finish: 14.70
 P_{atm} 14.69 psi
 11:38

Port No.	Port Position From Log ()	Port Position From Cable ()	True Port Depth "Dp" ()	Fluid Pressure Readings			Probe Temp. (°C)	Time H:M:S	Pressure Head Outside Port ()	Piez. Level Outside Port ()	Comments
				Inside Casing (P1)	Outside Casing (P2)	Inside Casing (P1)					
1	530			243.09	234.99	213.08	11.43				
2	490			295.65	217.68	205.66	11.45				
3	410			190.84	183.45	180.84	11.46				
4	360			169.11	162.49	169.12	11.49				
5	300			143.06	136.77	143.96	11.51				
6	250			121.34	115.25	121.35	11.53				
7	185			93.19	87.98	93.10	11.54				
8	145			75.72	70.93	75.72	11.56				
9	100			56.15	51.66	56.15	11.58				
10	85			49.61	45.17	49.62	11.59				

P_{atm} = atmospheric pressure

D_z = piezometric level in zone
 D_p = true depth of measurement point

Notes.

W.B.: 6.33 (Dif 4') Ans - bar 15.71 (Dif 4")

$$D_{\text{C}} = 0.099$$

WB : 2299 Tac 7["]
Adult : 8.35 Tac 4["]

Groundwater Sampling

Field Data Sheet

Project: Forecast

Monitoring Well No.: S18-1

Sampling Zone No(s):: 1-10

Date: Sept. 15, 2011 Atm. Rdg: 14.57
Start Time: 10:12 Atm. Rdg: 14.55
End Time: 12:40 Atm. Rdg: 14.55
Operators: JV/JDE

Additional Comments: (pH, turbidity, S.C., etc.)

$$\begin{array}{r} 1 \\ \times 450 \\ \hline 450 \end{array}$$

$$\begin{array}{r} 603 \\ \times 373 \\ \hline 363 \\ 180 \\ \hline 2231 \end{array}$$

$$\begin{array}{r} 653 \\ \times 203 \\ \hline 1306 \\ 130 \\ \hline 13153 \end{array}$$

$$\begin{array}{r} 103 \\ \times 53 \\ \hline 53 \\ 10 \\ \hline 53 \end{array}$$

Old Roosevelt Field Remedial Design
Multipoint Well Water Quality Parameters
Well No. SGP - 1

9/15/2011

Time	Port	pH	Specific Conductivity (mS/cm [°])	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
1030	1	6.38	0.264	5.20	173.5	17.25	1.5
1045	2	5.55	0.236	8.95	181.9	17.29	1.7
1055	3	5.39	0.295	6.20	191.7	17.44	2.0
1110	4	5.22	0.360	4.97	180.8	17.83	1.3
1125	5	5.12	0.596	5.80	189.2	17.77	1.0
1140	6	5.40	0.746	4.88	144.6	17.97	4.0
1155	7	5.33	0.548	5.10	107.6	17.92	1.40
1165	8	4.42	0.424	4.55	245.2	17.77	3.3
1215	9	6.47	0.275	6.79	121.8	17.39	6.5
1220	10	6.62	0.273	7.68	124.6	16.73	18

Acronyms:

°C - degrees Celsius

mg/L - milligrams per Liter

mS/cm[°] - milli-Siemens per centimeter

NTU - nephelometric turbidity unit

P.D.

Groundwater Sampling

Field Data Sheet

Project: Roosevelt T
Monitoring Well No.: SVP-2
Sampling Zone No(s): 1-10

Date: 9/13/11 Atm. Rdg: 14.63
 Start Time: 1336 Atm. Rdg: 14.63
 End Time: 1602 Atm. Rdg: 14.63
 Operators: M. Ethelij C. Whittom E. Kulkusky

Port No.	Run No.	Surface Function Tests (probe in flushing collar)						Position Sampler						Sample Collection Checks (probe located at sampling zone in Westbay casing)						Comments (volume recovered)	
		Shoe Out Valve	Close Vacuum	Check Vacuum	Open Valve	Apply Vacuum	Close Valve	Locate Port	Arm Out	Land Probe	Pressure in Westbay ()	Shoe Out	Zone Pressure ()	Open Valve	Zone Pressure ()	Close Valve	Shoe In	Pressure in Westbay ()			
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	196.73	✓	196.61	✓	✓	✓	✓	✓	196.75	1350	
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	180.80	✓	180.72	✓	✓	✓	✓	✓	✓	180.80	1405
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	163.52	✓	163.50	✓	✓	✓	✓	✓	✓	163.53	1421
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	146.24	✓	146.23	✓	✓	✓	✓	✓	✓	146.24	1440
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	128.96	✓	128.98	✓	✓	✓	✓	✓	✓	128.99	1454
6	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	111.68	✓	111.73	✓	✓	✓	✓	✓	✓	111.66	1508
7	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	85.74	✓	85.88	✓	✓	✓	✓	✓	✓	85.74	1526
8	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	68.44	✓	68.70	✓	✓	✓	✓	✓	✓	68.44	1540
9	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	46.80	✓	47.20	✓	✓	✓	✓	✓	✓	46.79	1555
10	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	25.14	✓	25.53	✓	✓	✓	✓	✓	✓	25.13	1608

Additional Comments: (nH turbidity SC etc.)

DTH-ANWIGR-~~6.33~~ 6.33 TIC
TOP OF SURFACE - 6.73

**Old Roosevelt Field Remedial Design
Multipoint Well Water Quality Parameters
Well No. SWP-2**

Time	Port	pH	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
13:37	1	7.68	0.313	7.35	70.8	20.55	0.42
14:13	2	6.87	0.333	8.74	103.3	22.20	0.17
14:27	3	6.77	0.328	6.01	89.9	20.60	0.77
14:45	4	6.45	0.297	6.96	102.2	20.54	0.35
15:00	5	6.40	0.295	8.80	101.7	20.64	0.35
15:15	6	5.75	0.302	7.79	119.9	21.00	0.15
15:32	7	6.32	0.318	8.65	116.8	21.69	0.17
15:45	8	6.45	0.447	6.83	117.9	21.15	0.44
15:59	9	5.43	1.506	4.56	110.6	20.26	0.28
16:11	10	6.64	0.627	3.45	46.3	20.53	1.83

Acronyms:

$^{\circ}\text{C}$ - degrees Celsius

mS/cme - milli-Siemens per

NTU - nephrolometric turbidity unit

with $\sigma = 0$

Groundwater Sampling

Field Data Sheet

Project: Roosevelt
Monitoring Well No.: 519P-3
Sampling Zone No(s): 1-7 AND

Date: 9/19/2011

Start Time: 0816 Atm. Rdg: 14.66
End Time: 1613 Atm. Rdg: 14.63

Elm Line. 0 3 Avil. Aug. : 183 Operators: ~~EJK~~ CIC

Operators: EK, CIR

Port No.	Run No.	Surface Function Tests (probe in flushing collar)										Sample Collection Checks (probe located at sampling zone in Westbay casing)						
		Shoe Out	Close Valve	Check Vacuum	Open Valve	Apply Vacuum	Locate Port	Arm Out	Land Probe	Pressure in Westbay ()	Shoe Out	Zone Pressure ()	Open Valve	Zone Pressure ()	Close Valve	Shoe In	Pressure in Westbay ()	Comments (volume recovered)
1	1	✓	✓	✓	✓	✓	✓	✓	✓	197.79	✓	197.70	✓	✓	✓	✓	197.29	6828
2	1	✓	✓	✓	✓	✓	✓	✓	✓	173.12	✓	173.10	✓	✓	✓	✓	173.14	6850
3	1	✓	✓	✓	✓	✓	✓	✓	✓	164.18	✓	164.97	✓	✓	✓	✓	164.98	6969
4	1	✓	✓	✓	✓	✓	✓	✓	✓	129.89	✓	130.14	✓	✓	✓	✓	130.89	0925
5	1	✓	✓	✓	✓	✓	✓	✓	✓	78.03	✓	78.63	✓	✓	✓	✓	78.02	0939
6	1	✓	✓	✓	✓	✓	✓	✓	✓	47.74	✓	48.56	✓	✓	✓	✓	47.74	0953
7	1	✓	✓	✓	✓	✓	✓	✓	✓	26.07	✓	26.95	✓	✓	✓	✓	26.04	100.6

Additional Comments: (pH, turbidity, S.C., etc.)

additional Comments: (pH, turbidity, S.C., etc.)	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>
	450	393	373	293	173	103	53

$$DTW: top\; WB = 27.48$$

Anular: Top of 4^o,
25-18.

Old Roosevelt Field Remedial Design
Multipoint Well Water Quality Parameters
Well No. CSP-3

Well No. C-149-3

SC 1.642 2022.9.9

Time	Port	pH	Specific Conductivity (mS/cm ³)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
0838	1	6.28	0.353	6.62	-87.5	20.20	2.73
0850	2	6.67	0.240	7.06	123.1	19.45	0.73
0909	3	6.77	0.207	5.72	100.70	19.62	10.59
0925	4	5.47	0.230	6.70	116.2	19.75	3.30
0939	5	5.17	0.653	6.46	135.5	20.30	0.25
0953	6	5.22	0.642	4.49	96.7	22.46	27.4
1006	7	5.94	1.016	3.87	44.8	20.96	115

Acronyms:

(C - degrees Celsius)

mg/L - milligrams per Liter

mS/cm^c - milli-Siemens per centimeter

NTU - nephelometric turbidity unit

Did Roosevelt Field mall

Project:

Monitoring Well No.: 516P-4

Sampling Zone No(s)::

Pit No.	Surface Function Tests (probe in flushing collar)										Sample Collection Checks (probe located at sampling zone in Westbay casing)						
	Shoe Out Valve	Close Valve	Check Vacuum	Open Valve	Apply Vacuum	Close Valve	Locate Port	Arm Out	Land Probe	Pressure in Westbay ()	Shoe Out	Zone Pressure ()	Open Valve	Zone Pressure ()	Close Valve	Shoe In	Pressure in Westbay ()
1	✓	✓	✓	✓	✓	✓	✓	✓	✓	184.46	✓	184.10	✓	186.09	✓	186.45	10.31
2	✓	✓	✓	✓	✓	✓	✓	✓	✓	175.78	✓	175.45	✓	175.15	✓	175.38	10.53
3	✓	✓	✓	✓	✓	✓	✓	✓	✓	155.46	✓	155.26	✓	155.24	✓	155.45	10.0
4	✓	✓	✓	✓	✓	✓	✓	✓	✓	135.99	✓	135.81	✓	135.81	✓	135.98	11.89
5	✓	✓	✓	✓	✓	✓	✓	✓	✓	127.33	✓	127.03	✓	127.23	✓	127.33	4.45
6	✓	✓	✓	✓	✓	✓	✓	✓	✓	110.09	✓	110.00	✓	109.99	✓	110.01	1200
7	✓	✓	✓	✓	✓	✓	✓	✓	✓	84.01	✓	84.85	✓	84.25	✓	84.09	12.10
8	✓	✓	✓	✓	✓	✓	✓	✓	✓	66.66	✓	67.04	✓	67.03	✓	66.66	10.25
9	✓	✓	✓	✓	✓	✓	✓	✓	✓	47.15	✓	47.68	✓	47.61	✓	47.15	10.35
10	✓	✓	✓	✓	✓	✓	✓	✓	✓	33.06	✓	33.97	✓	33.97	✓	33.29	12.50

Additional Comments: (pH, turbidity, S.C., etc.)

$$\frac{1}{420} \quad \frac{2}{400} \quad \frac{3}{353} \quad \frac{4}{308} \quad \frac{5}{288} \quad \frac{6}{248} \quad \frac{7}{188} \quad \frac{8}{148} \quad \frac{9}{103} \quad \frac{10}{68}$$

**Old Roosevelt Field Remedial Design
Multipoint Well Water Quality Parameters
Well No. SORP-C**

9 | 13 | 2011

Time	Port	pH	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
10:31	1 (nw)	5.96	0.367	7.93	171.3	20.88	3.1
10:55	2	5.63	0.249	5.66	200.3	19.49	1.6
11:10	2 (nw)	5.36	0.392	8.15	179.5	18.10	1.4
11:30	3 (nw)	5.62	0.348	7.01	196.3	18.85	2.6
11:45	4	5.43	0.411	7.16	187.9	18.40	1.6
12:00	5	5.47	0.352	7.62	181.8	18.49	2.5
12:15	6	5.33	0.416	7.18	178.5	18.14	3.3
12:30	7	5.61	0.341	7.18	176.9	18.70	2.3
12:45	8	5.76	0.400	5.37	167.4	18.40	1.7
13:00	9	5.94	0.374	5.89	167.4	18.40	1.7
13:15	10	6.22	0.533	4.72	160.2	17.96	2.8

Acronyms:

°C - degrees Celsius

mg/L = milligrams per liter

mS/cm^c - milli-Siemens per centimet

NTU - nephrolometric turbidity unit

Amulor 34.46' TOC 4"
w/B 34.68' TOC 4"
 $\text{OD} = 0.090\text{m}$

Project: Roosevelt Field mall
Monitoring Well No.: SVP-5
Sampling Zone No(s.): 1-10

Groundwater Sampling

Field Data Sheet

Date: Sept. 14 2011
Start Time: 0905 Atm. Rdg: 14.57
End Time: 1030 Atm. Rdg: 19.58
Operators: DE 4 JO

Pvt No.	Surface Function Tests (probe in flushing collar)					Position Sampler					Sample Collection Checks (probe located at sampling zone in Westbay casing)					Comments (volume recovered)
	Shoe Out R 5 S 2 N 1	Close Valve	Check Vacuum	Open Valve	Apply Vacuum	Close Valve	Locate Port	Arm Out	Land Probe	Pressure in Westbay ()	Shoe Out	Zone Pressure ()	Open Valve	Zone Pressure ()	Close Valve	Shoe In Westbay ()
1	✓	✓	✓	✓	✓	✓	✓	✓	✓	189.10	✓	189.05	✓	✓	✓	189.05 0.820 + DUP
2	✓	✓	✓	✓	✓	✓	✓	✓	✓	179.07	✓	179.07	✓	✓	✓	179.07 0.840
3	✓	✓	✓	✓	✓	✓	✓	✓	✓	157.28	✓	157.60	✓	✓	✓	157.27 0.650
4	✓	✓	✓	✓	✓	✓	✓	✓	✓	137.72	✓	138.04	✓	✓	✓	137.74 0.905
5	✓	✓	✓	✓	✓	✓	✓	✓	✓	129.00	✓	129.36	✓	✓	✓	128.99 0.920
6	✓	✓	✓	✓	✓	✓	✓	✓	✓	111.59	✓	112.59	✓	✓	✓	111.60 0.930
7	✓	✓	✓	✓	✓	✓	✓	✓	✓	85.43	✓	87.46	✓	✓	✓	85.45 0.945
8	✓	✓	✓	✓	✓	✓	✓	✓	✓	68.03	✓	70.47	✓	✓	✓	68.08 1.000
9	✓	✓	✓	✓	✓	✓	✓	✓	✓	44.07	✓	47.01	✓	✓	✓	44.06 1.010
10	✓	✓	✓	✓	✓	✓	✓	✓	✓	26.33	✓	25.45	✓	✓	✓	26.34 1.025

Additional Comments: (pH, turbidity, S.C., etc.)

$\frac{1}{430} \frac{2}{408} \frac{3}{359} \frac{4}{313} \frac{5}{293} \frac{6}{253} \frac{7}{193} \frac{8}{153} \frac{9}{98} \frac{10}{48}$

Old Roosevelt Field Remedial Design
 Multiport Well Water Quality Parameters
 Well No. 59 P-5

at 12/2011

Time	Port	pH	Specific Conductivity (mS/cm [°])	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
0820	1	5.25	0.167	6.85	180.5	19.41	3.4
0840	2	3.41	0.206	6.66	183.3	18.37	6.9
0859	3	5.07	0.309	5.20	187.9	18.37	1.7
0905	4	2.04	0.684	7.09	205.0	19.03	8.6
0920	5	4.96	0.609	7.06	201.4	19.57	0.65
0939	6	5.36	0.959	7.41	202.8	19.57	2.5
0945	7	5.17	1.262	5.06	184.0	19.92	340
1000	8	5.53	1.151	5.67	152.9	20.06	14
1010	9	5.99	1.144	4.58	88.0	20.10	55
1025	10	5.74	1.121	3.80	114.8	20.20	16

18.89 Temp

Acronyms:

°C - degrees Celsius

mg/L - milligrams per Liter

mS/cm[°] - milli-Siemens per centimeter

NTU - nephelometric turbidity unit

Annular: 6.35" Tac 4¹¹
WB: 53.14" Tac 2¹¹

P. 1 A

Groundwater Sampling

Field Data Sheet

Project: **B**eaconsfield Field road

Project: House Well No.: Sup-6

Monitoring Well No.: SUP-6
Sampling Zone No(s).: 1 - 6

Monitoring Well No.: SUP-6
Sampling Zone No(s).: 1 - 6

Monitoring Well No.: SUP-6
Sampling Zone No(s).: 1 - 6

Point	Surface Function Tests (probe in flushing collar)										Sample Collection Checks (probe located at sampling zone in Westbay casing)						Comments (volume recovered)		
	Shoe Out Rinse %	Close Valve	Check Vacuum	Open Valve	Apply Vacuum	Close Valve	Locate Port	Land Probe	Arm Out	Arm In	Pressure in Westbay ()	Shoe Out ()	Zone Pressure ()	Open Valve	Zone Pressure ()	Close Valve	Shoe In ()	Pressure in Westbay ()	
1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	186.81	✓	201.17	✓	201.14	✓	✓	186.81	1139
2	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	153.37	✓	168.21	✓	168.10	✓	✓	153.37	1145
3	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	101.25	✓	106.61	✓	116.60	✓	✓	101.26	1200
4	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	70.82	✓	86.49	✓	86.48	✓	✓	70.82	1219
5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	38.17	✓	56.51	✓	56.51	✓	✓	38.16	1230
6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.63	✓	32.75	✓	32.75	✓	✓	14.65	1240

Additional Comments: (pH, turbidity, S.C., etc.)

$$\begin{array}{r} & 6 \\ \hline 447 & 370 \\ & 250 \\ & 180 \\ & 105 \\ \hline & 50 \end{array}$$

**Old Roosevelt Field Remedial Design
Multipoint Well Water Quality Parameters
Well No. SLP-6**

9 | 14/2011

Time	Port	pH	Specific Conductivity (mS/cm [°])	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
1130	1	5.20	0.086	5.98	105.3	17.39	3.4
1145	2	5.08	0.103	6.79	37.3	16.75	1.4
1200	3	5.76	0.182	5.31	46.9	18.63	3.0
1210	4	5.05	0.210	5.74	65.2	17.59	3.5
1230	5	5.92	0.440	3.79	9.6	17.85	1.3
1240	6	6.32	0.293	3.95	10.9	18.93	2.4

Acronyms:

°C - degrees Celsius

mg/L - milligrams per Liter

mS/cm^c - milli-Siemens per centimeter

NTU - nephelometric turbidity unit

Groundwater Sampling

Field Data Sheet

Project: Rosent
Monitoring Well No.: SVP-7
Sampling Zone No(s): 1-16

Project: Rosent
Vell No.: SVP-7
No(s.): 1-6

SVP-7
1-6

Vell No.:
e No(s).:

Monitoring V
Sampling Zone

Project: Roosevelt

Well No.: SVP-7
Site No(s): 1-6

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Well No.: SVP-7
Site No(s): 1-6

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Well No.: SVP-7
Site No(s): 1-6

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Additional Comments: (pH, turbidity, S.C., etc.)

$$\begin{array}{r} & \underline{6} \\ 4 & 8 \\ \hline 4 & 4 & 5 \\ & \underline{4} & 2 & 8 \\ & & \underline{3} & 1 & 5 \\ & & & \underline{2} & 0 & 8 \\ & & & & \underline{1} & 0 & 3 \\ & & & & & \underline{5} \\ & & & & & & 4 \\ \hline & & & & & & 8 \end{array}$$

**Old Roosevelt Field Remedial Design
Multipoint Well Water Quality Parameters
Well No. SVP-7**

Time	Port	pH	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
11:48	1	5.96	0.123	6.57	374.8	18.92	1.99
12:03	2	5.33	0.193	6.75	311.5	18.78	0.88
12:14	3	5.57	0.210	6.30	301.4	18.02	2.83
12:33	4	5.72	0.458	4.94	213.9	18.76	28.1
12:46	5	6.33	0.350	7.03	162.5	18.62	5.46
12:59	6	6.01	0.555	6.31	121.2	18.26	18.0

Acronyms:

°C - degrees Celsius

mg/L - milligrams per Liter

mS/cm^c - milli-Siemens per centimeter
NTU - nephelometric turbidity unit

Groundwater Sampling

Field Data Sheet

Project: Rooftop Grid
Monitoring Well No.: S11P-8
Sampling Zone No(s).: 1-6

Date: September 15, 2011 Atm. Rdg: 14.61
Start Time: 12:30 Atm. Rdg: 14.57
End Time: 14:30 Atm. Rdg: 14.57
Operators: ME & CW

Port No.	AEM No.	Surface Function Tests (probe in flushing collar)										Sample Collection Checks (probe located at sampling zone in Westbay casing)						
		Shoe Out	Close Valve	Check Vacuum	Open Valve	Apply vacuum	Locate Port	Arm Out	Land Probe	Pressure in Westbay (')	Shoe Out	Zone Pressure (')	Open Valve	Zone Pressure (')	Close Valve	Shoe In	Pressure in Westbay (')	Comments (volume recovered)
1	1	✓	✓	✓	✓	✓	✓	✓	✓	196.09	✓	194.44	✓	194.44	✓	194.47	✓	145.28 146.08 / 13.00 <i>Progen kuroshio</i>
1	2	✓	✓	✓	✓	✓	✓	✓	✓	196.08	✓	194.46	✓	194.47	✓	194.47	✓	
2	1	✓	✓	✓	✓	✓	✓	✓	✓	169.12	✓	169.31	✓	168.29	✓	✓	✓	169.12 / 13 : 28
3	1	✓	✓	✓	✓	✓	✓	✓	✓	110.50	✓	111.88	✓	111.35	✓	✓	✓	110.50 / 13 : 46
3	2	✓	✓	✓	✓	✓	✓	✓	✓	238	✓	✓	✓	✓	✓	✓	✓	
4	1	✓	✓	✓	✓	✓	✓	✓	✓	158	✓	155.76	✓	158.94	✓	✓	✓	155.75 14:00
5	1	✓	✓	✓	✓	✓	✓	✓	✓	103	✓	103	✓	51.81	✓	✓	✓	51.82 14:10
6	1	✓	✓	✓	✓	✓	✓	✓	✓	48	✓	48	✓	97.86	✓	✓	✓	97.86 14:20

Additional Comments: (pH, turbidity, S.C., etc.)

$$\text{S: (pH, turbidity, S.C., etc.)} \quad P_{AB} = 0.2 \text{ atm}$$

$$B_1: \frac{6}{48} \quad B_2: \frac{5}{103} \quad B_3: \frac{4}{158} \quad B_4: \frac{3}{238} \quad B_5: \frac{2}{373}$$

$$A_{AB}: 13.50' \text{ (Surface)} \quad A_{BB}: 21.42' \text{ (Tropics)}$$

**Old Roosevelt Field Remedial Design
Multipoint Well Water Quality Parameters
Well No. S10 - B**

Time	Port	pH	Specific Conductivity (mS/cm ³)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
13:00	1	5.86	0.163	0.16	246.2	17.57	0.93
13:20	2	4.44	0.138	0.38	303.7	17.32	1.72
13:40	3	4.31	0.169	7.27	349.3	17.07	4.70
14:00	4	4.22	0.107	7.48	106.1	17.02	0.56
14:10	5	4.40	0.081	7.60	326.4	16.41	1.87
14:20	6	4.32	0.230	2.81	305.9	16.43	2.20

Acronyms:

°C - degrees Celsius

mg/L - milligrams per Liter

mS/cm^c - milli-Siemens per centimeter

NTU - nephelometric turbidity unit

$$\rho \perp d = \emptyset$$

Groundwater Sampling

Field Data Sheet

Field Data Sheet

Project: Roosevelt Monitoring Well No.: SUP-9 Sampling Zone No(s).: j-1D

Date: 9/13/11 Atm. Rdg: 14.62
Start Time: 900 Atm. Rdg: 14.63
End Time: 1210 Atm. Rdg: 14.63
Operators: M. EHSOFT, C. WHITTON, E. KULKUSKA

Port No.	Surface Function Tests (probe in flushing collar)										Position Sampler										Sample Collection Checks (probe located at sampling zone in Westbay casing)									
	Shoe Out	Close Valve	Check Vacuum	Open Valve	Apply Vacuum	Close Valve	Locate Port	Arm Out	Land Probe	Pressure in Westbay ()	Shoe Out	Zone Pressure ()	Open Valve	Zone Pressure ()	Close Valve	Shoe In	Pressure in Westbay ()	Comments (volume recovered)												
1	✓	✓	✓	✓	✓	✓	✓	✓	✓	210.80	✓	210.64	✓	✓	✓	✓	✓	✓	✓	210.83	0.910									
2	✓	✓	✓	✓	✓	✓	✓	✓	✓	176.19	✓	176.05	✓	✓	✓	✓	✓	✓	✓	176.20	0.951									
3	✓	✓	✓	✓	✓	✓	✓	✓	✓	154.52	✓	154.50	✓	✓	✓	✓	✓	✓	✓	154.56	1.012									
4	✓	✓	✓	✓	✓	✓	✓	✓	✓	135.04	✓	135.06	✓	✓	✓	✓	✓	✓	✓	135.08	1.030									
5	✓	✓	✓	✓	✓	✓	✓	✓	✓	126.35	✓	126.38	✓	✓	✓	✓	✓	✓	✓	126.39	1.044									
6	✓	✓	✓	✓	✓	✓	✓	✓	✓	109.06	✓	109.13	✓	✓	✓	✓	✓	✓	✓	109.11	1.104									
7	✓	✓	✓	✓	✓	✓	✓	✓	✓	83.10	✓	83.30	✓	✓	✓	✓	✓	✓	✓	83.10	1.122									
8	✓	✓	✓	✓	✓	✓	✓	✓	✓	65.76	✓	66.15	✓	✓	✓	✓	✓	✓	✓	65.47	1.138									
9	✓	✓	✓	✓	✓	✓	✓	✓	✓	46.29	✓	46.80	✓	✓	✓	✓	✓	✓	✓	46.27	1.153									
10	✓	✓	✓	✓	✓	✓	✓	✓	✓	22.42	✓	23.00	✓	✓	✓	✓	✓	✓	✓	22.40	1.207									

Additional Comments: (pH, turbidity, S.C., etc.)

$$\begin{array}{r}
 & 10 \\
 & \overline{47} \\
 6 & 9 \\
 \hline
 187 & 147 \\
 & 102 \\
 & 9 \\
 \hline
 & 10
 \end{array}$$

$$DTW - well = 24.11$$

$$DTW\text{-ANVILAR} = \begin{cases} 14.89 \text{ TIC} \\ 15.34 \text{ SURFACE} \end{cases}$$

**Old Roosevelt Field Remedial Design
Multiport Well Water Quality Parameters
Well No. 5WP-9**

Time	Port	pH	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
09/8	1	7.65	0.333	8.18	147.1	18.27	1.10
10/3	2	7.02	0.524	7.89	79.2	21.68	0.22
10/3	3	6.54	0.528	7.75	75.4	20.50	0.19
10/36	4	6.98	0.318	6.60	83.6	19.13	0.51
10/51	5	6.43	0.321	7.04	80.5	20.29	5.11
11/3	6	6.71	0.287	6.95	73.5	20.23	0.90
11/30	7	7.46	0.636	9.25	99.6	21.27	12.3
11/44	8	6.84	0.363	7.38	67.3	20.25	1.01
11/58	9	6.20	0.807	9.83	73.8	20.71	1.74
12/17	10	7.11	0.982	5.13	50.7	20.54	0.38

Acronyms:

°C - degrees Celsius

mg/l = milligrams per liter

www.simec.com/simone nor contimoter

mS/cm² = Millisiemens per centimetre

$$P_{\text{D}} = 0.001$$

Groundwater Sampling

Field Data Sheet

Project: Roosevelt
Monitoring Well No.: S1/P-10
Sampling Zone No(s): 1-10

Monitoring Well No.: S1P-10
Sampling Zone No(s): 1-10

Monitoring Well No.: S1/P-10
Sampling Zone No(s).: 1-10

Date: 9/13/2011 Atm. Rdg: 14.57
Start Time: 1600 End Time: 1625 Atm. Rdg: 1458
Operators: SV DE

Run No.	Surface Function Tests (probe in flushing collar)						Position Sampler						Sample Collection Checks (probe located at sampling zone in Westbay casing)						Comments (volume recovered)
	Shoe Out	Close Valve	Check Vacuum	Open Valve	Apply Vacuum	Close Valve	Locate Port	Arm Out	Land Probe	Pressure in Westbay ()	Shoe Out	Zone Pressure ()	Open Valve	Zone Pressure ()	Close Valve	Shoe In	Pressure in Westbay ()		
1	✓	✓	✓	✓	✓	✓	✓	✓	✓	210.62	✓	210.37	✓	210.35	✓	✓	210.61	1420	
2	✓	✓	✓	✓	✓	✓	✓	✓	✓	175.82	✓	175.67	✓	✓	✓	✓	175.82	1435	
3	✓	✓	✓	✓	✓	✓	✓	✓	✓	154.06	✓	154.00	✓	✓	✓	✓	154.05	1450	
4	✓	✓	✓	✓	✓	✓	✓	✓	✓	134.46	✓	134.78	✓	✓	✓	✓	134.46	1505	
5	✓	✓	✓	✓	✓	✓	✓	✓	✓	125.88	✓	126.16	✓	✓	✓	✓	125.87	1515	
6	✓	✓	✓	✓	✓	✓	✓	✓	✓	108.93	✓	109.20	✓	✓	✓	✓	108.93	1535	
7	✓	✓	✓	✓	✓	✓	✓	✓	✓	89.07	✓	83.56	✓	✓	✓	✓	82.38	559	
8	✓	✓	✓	✓	✓	✓	✓	✓	✓	64.85	✓	66.69	✓	✓	✓	✓	64.84	600	
9	✓	✓	✓	✓	✓	✓	✓	✓	✓	45.21	✓	47.34	✓	✓	✓	✓	45.20	510	
10	✓	✓	✓	✓	✓	✓	✓	✓	✓	21.27	✓	23.50	✓	✓	✓	✓	21.27	1625	

Additional Comments: (pH, turbidity, S.C., etc.)

**Old Roosevelt Field Remedial Design
Multipoint Well Water Quality Parameters
Well No. S 9 P-10**

9 | 3 | 2011

Time	Port	pH	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
1420	1	6.54	0.283	6.73	140.6	18.67	2.2
1435	2	5.90	0.298	5.72	198.5	18.17	0.85
1450	3	5.29	0.262	5.57	189.4	19.1	0.90
1505	4	5.19	0.329	4.63	161.5	18.68	0.95
1515	5	5.00	0.283	4.94	178.9	18.82	0.65
1535	6	4.81	0.050	6.53	-107.6	20.17	0.65
1558	7	5.13	0.473	6.34	136.9	18.99	0.65
1600	8	5.82	0.678	7.00	137.3	19.7	4.9
1610	9	5.98	1.060	5.89	120.7	19.33	1.6
1625	10	6.55	0.939	6.55	121.5	18.91	1.1

Acronyms:

°C - degrees Celsius

mg/L - milligrams per Liter

$\text{mS/cm} \times 10^3$ = milli-Siemens per centimeter

NTL I - nephrolemetric turbidity unit

P.D.: D. DPM

Rosemont

Project: SUVP-11
Monitoring Well No.: 1-10
Sampling Zone No(s).: 1-10

Groundwater Sampling

Field Data Sheet

Date: September 14, 2011
Start Time: 15:18 Atm. Rdg: 14.68
End Time: 14:50 Atm. Rdg: 14.67
Operators: Meg & EK

Port No.	Shoe Out (ft)	Surface Function Tests (probe in flushing collar)				Position Sampler				Sample Collection Checks (probe located at sampling zone in Westbay casing)				Comments (volume recovered)			
		Close Valve	Check Vacuum	Open Valve	Apply Vacuum	Close Valve	Locate Port	Land Probe	Arm Out	Pressure in Westbay ()	Shoe Out	Zone Pressure ()	Open Valve	Zone Pressure ()	Close Valve	Shoe In Westbay ()	
1	1	✓	✓	✓	✓	✓	✓	✓	✓	211.90	✓	212.27	✓	✓	✓	✓	15:25
2	2	✓	✓	✓	✓	✓	✓	✓	✓	177.23	✓	177.29	✓	✓	✓	✓	15:40
2	3	✓	✓	✓	✓	✓	✓	✓	✓	177.31	✓	177.38	✓	✓	✓	✓	—
2	4	✓	✓	✓	✓	✓	✓	✓	✓	177.36	✓	177.36	✓	✓	✓	✓	—
3	1	✓	✓	✓	✓	✓	✓	✓	✓	177.30	✓	177.26	✓	✓	✓	✓	—
3	2	✓	✓	✓	✓	✓	✓	✓	✓	155.49	✓	156.17	✓	✓	✓	✓	16:15
4	1	✓	✓	✓	✓	✓	✓	✓	✓	136.17	✓	137.11	✓	✓	✓	✓	16:35
4	2	✓	✓	✓	✓	✓	✓	✓	✓	136.08	✓	137.11	✓	✓	✓	✓	—
4	3	✓	✓	✓	✓	✓	✓	✓	✓	136.20	✓	137.12	✓	✓	✓	✓	136.18
5	1	✓	✓	✓	✓	✓	✓	✓	✓	179.54	✓	188.51	✓	✓	✓	✓	127.55
5	2	✓	✓	✓	✓	✓	✓	✓	✓	110.19	✓	111.35	✓	✓	✓	✓	12:10
6	1	✓	✓	✓	✓	✓	✓	✓	✓	84.19	✓	85.44	✓	✓	✓	✓	17:26
6	2	✓	✓	✓	✓	✓	✓	✓	✓	84.18	✓	85.62	✓	✓	✓	✓	17:35
7	3	✓	✓	✓	✓	✓	✓	✓	✓	147	✓	147	✓	✓	✓	✓	—
7	4	✓	✓	✓	✓	✓	✓	✓	✓	102	✓	102	✓	✓	✓	✓	—
8	1	✓	✓	✓	✓	✓	✓	✓	✓	67.00	✓	69.33	✓	✓	✓	✓	18:00
9	1	✓	✓	✓	✓	✓	✓	✓	✓	47.46	✓	49.84	✓	✓	✓	✓	18:47

Additional Comments: (pH, turbidity, S.C., etc.)

$\frac{1}{482} \frac{2}{402} \frac{3}{352} \frac{4}{307} \frac{5}{287} \frac{6}{247} \frac{7}{187} \frac{8}{147} \frac{9}{102} \frac{10}{47}$

Groundwater Sampling

Field Data Sheet

Project: Boosguliet Tree Well No.: S-11 Zone No(s).: 1-10

Project

一一

1-10

1-10

Port No.	Surface Function Tests (probe in flushing collar)						Position Sampler						Sample Collection Checks (probe located at sampling zone in Westbay casing)						Comments (volume recovered)
	Shoe Out	Close Valve	Check Vacuum	Open Valve	Apply Vacuum	Close Valve	Locate Port	Arm Out	Land Probe	Pressure in Westbay ()	Shoe Out	Zone Pressure ()	Open Valve	Zone Pressure ()	Close Valve	Shoe In	Pressure in Westbay ()		
10 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	23.62	✓	26.04	✓	✓	✓	✓	✓	18:35	
10 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	23.60	✓	26.03	✓	✓	✓	✓	✓	—	
10 3	✓	✓	✓	✓	✓	✓	✓	✓	✓	23.64	✓	26.03	✓	✓	✓	✓	✓	23.61	

Additional Comments: (pH, turbidity, S.C., etc.)

$\delta\pi$: 26-38' ω_B π_B
Amplitude: 0.15-1.5' π_B

**Old Roosevelt Field Remedial Design
Multipoint Well Water Quality Parameters
Well No. 5Vp - 11**

Time	Port	pH	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
15:25	1	6.46	0.127	10.02	312.6	18.25	1.11
15:40	2	6.44	0.218	6.57	206.5	19.92	16.6
16:20	3	6.72	0.255	8.96	119.6	18.72	1.85
16:35	4	6.41	0.369	9.52	65	21.13	1.43
17:10	5	6.07	0.340	9.29	38.6	18.35	2.71
17:20	6	5.71	0.425	7.93	108.7	18.15	1.40
17:35	7	5.90	0.175	10.27	103.6	18.32	0.26
18:00	8	5.51	0.224	8.32	124.4	17.33	1.24
18:10	9	6.15	0.276	6.94	98.1	18.53	0.43
18:35	10	5.73	0.127	6.28	187.4	19.23	0.44

Acronyms:

°C - degrees Celsius
mg/L - milligrams per Liter
mS/cm - milli-Siemens per centimeter
NTU - nephelometric turbidity unit

Fig: D.2994

Groundwater Sampling

Field Data Sheet

Project: Rancho Muriel
Monitoring Well No.: S19-12
Sampling Zone No(s): 1-6

Project:

12

12

Vell No.: S

Monitoring V

Date: September 15, 2011
Start Time: 0901 Atm. Rdg: 14.59
End Time: 11:45 Atm. Rdg: 14.58
Operators: ME of CWS

Additional Comments: (pH, turbidity, S.C., etc.)

$$\begin{array}{r} \frac{3}{405} \\ \times 15 \\ \hline 15 \\ 405 \\ \hline 485 \end{array}$$

$$\begin{array}{r} 6 \\ \times 245 \\ \hline 295 \\ 355 \\ \hline 14725 \end{array}$$

ANU LIB: 26.24' (PDSW8) ; Annual: 13.47 DPPY

**Old Roosevelt Field Remedial Design
Multiport Well Water Quality Parameters
Well No. SWP-12**

Time	Port	pH	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
9:15	1	6.10	0.244	7.32	56.1	17.91	0.62
10:05	2	5.46	0.020	9.04	17.7	18.39	1.34
10:30	3	5.16	0.137	6.60	147.8	18.12	0.86
10:55	4	4.91	0.136	5.31	250.8	18.03	0.89
11:10	5	5.92	0.294	4.41	235.1	18.11	13.6
11:30	6	6.38	0.151	4.61	189.2	18.05	0.72

Acronyms:

°C - degrees Celsius

mg/L - milligrams per Liter

mmS/cm² - milli-Siemens per centimeter
NTU - nephrolometric turbidity unit

Answer : At top of class :
 $w\theta = 11.34$ to c 4 "

$$P_{\text{SD}} = 0.01 \mu\text{W}$$

Groundwater Sampling

Field Data Sheet

Project: Roosevelt
Monitoring Well No.: S1P-13
Sampling Zone No(s): 1-6

Date: Sept. 15, 2011
Start Time: 0745 Atm. Rdg: 14.57
End Time: 0935 Atm. Rdg: 14.56
Operators: SV / DE

Pvt Run No.	Surface Function Tests (probe in flushing collar)						Position Sampler						Sample Collection Checks (probe located at sampling zone in Westbay casing)					
	Shoe Out Valve	Close Valve	Check Vacuum	Open Valve	Apply Vacuum	Close Valve	Locate Port	Arm Out	Land Probe	Pressure in Westbay ()	Shoe Out	Zone Pressure ()	Open Valve	Zone Pressure ()	Close Valve	Shoe In	Pressure in Westbay ()	Comments (volume recovered)
1	✓	✓	✓	✓	✓	✓	✓	✓	✓	237.40	✓	231.22	✓	✓	✓	✓	239.40	0805
2	✓	✓	✓	✓	✓	✓	✓	✓	✓	281.18	✓	216.98	✓	✓	✓	✓	281.17	0820
5	✓	✓	✓	✓	✓	✓	✓	✓	✓	187.36	✓	181.67	✓	✓	✓	✓	187.36	0835
4	✓	✓	✓	✓	✓	✓	✓	✓	✓	165.59	✓	160.12	✓	✓	✓	✓	165.59	0845
5	✓	✓	✓	✓	✓	✓	✓	✓	✓	139.96	✓	134.29	✓	✓	✓	✓	139.92	0900 +DUP
6	✓	✓	✓	✓	✓	✓	✓	✓	✓	117.65	✓	112.36	✓	✓	✓	✓	117.64	0920

Additional Comments: (pH, turbidity, S.C., etc.)

9/15/2011

**Old Roosevelt Field Remedial Design
Multipoint Well Water Quality Parameters
Well No. S9P-13**

Time	Port	pH	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
0805	1	3.15	0.090	8.76	11.6	16.75	0.75
0820	2	4.58	0.139	10.34	146.0	16.59	1.8
0835	3	4.63	0.156	8.41	203.7	16.88	1.00
0845	4	4.99	0.184	7.67	144.2	17.31	0.70
0900	5	5.01	0.200	8.69	27.0	18.08	0.95
0920	6	6.00	0.222	6.07	88.9	17.24	1.8

Acronyms:

°C - degrees Celsius

mg/L - milligrams per Liter

mS/cm_c - milli-Siemens per centimeter

NTU - nephelometric turbidity unit

$$P(D) = 0.4 \text{ ppm}$$

Groundw

Groundwater Sampling

Field Data Sheet

Project: Socorro Monitoring Well No.: SUP-14 Sampling Zone No(s): 1-10

Date: Sept. 19, 2011
Start Time: 05:14 Atm. Rdg: 14.81
End Time: 13:50 Atm. Rdg: 14.76
Operators: JD, DE & CW

Port	R ₅ %	Surface Function Tests (probe in flushing collar)						Position Sampler						Sample Collection Checks (probe located at sampling zone in Westbay casing)						Comments (volume recovered)
		Shoe Out Valve	Close Vacuum	Check Vacuum	Open Valve	Apply Vacuum	Close Valve	Locate Port	Arm Out	Land Probe	Pressure in Westbay ()	Shoe Out	Zone Pressure ()	Open Valve	Zone Pressure ()	Close Valve	Shoe In	Pressure in Westbay ()		
1	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	945.09	✓	234.91	✓	234.89	✓	✓	✓	345.00	0923
1	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	943.94	✓	234.87	✓	234.86	✓	✓	✓	43.95	
2	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	917.38	✓	917.54	✓	217.34	✓	✓	✓	97.38	1010
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	917.39	✓	917.34	✓	217.34	✓	✓	✓	97.39	
2	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	917.23	✓	917.35	✓	217.35	✓	✓	✓	97.34	
2	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	917.67	✓	917.43	✓	217.43	✓	✓	✓	96.70	
3	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	92.94	✓	183.16	✓	183.16	✓	✓	✓	92.44	1115
3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	91.49	✓	183.15	✓	183.16	✓	✓	✓	91.41	
4	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	170.84	✓	162.27	✓	162.27	✓	✓	✓	170.62	
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	170.62	✓	162.27	✓	162.27	✓	✓	✓	170.59	
4	3	✓	✓	✓	✓	✓	✓	✓	✓	✓	170.59	✓	162.30	✓	162.30	✓	✓	✓	170.50	
4	4	✓	✓	✓	✓	✓	✓	✓	✓	✓	170.45	✓	162.31	✓	162.31	✓	✓	✓	170.45	
5	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	146.35	✓	136.62	✓	136.62	✓	✓	✓	146.35	1250
5	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	145.39	✓	136.61	✓	136.61	✓	✓	✓	145.38	
6	1	✓	✓	✓	✓	✓	✓	✓	✓	✓	130.43	✓	115.15	✓	115.15	✓	✓	✓	130.43	13:35

Additional Comments: (pH, turbidity, S.C., etc.)

Annular:
16.80' TIC
DTR: 6.05' TIC
6.31 top of
5'

Page 2 of 3

Groundwater Sampling

Field Data Sheet

Project: Roosevelt Field Mall

Monitoring Well No.: SGP-14

Sampling Zone No(s): 1 - 10

Date: Sept 19, 2011
 Start Time: 09:14 Atm. Rdg: 14.8
 End Time: 13:59 Atm. Rdg: 14.76
 Operators: JG, DF, ACW

Pvt #	Surface Function Tests (probe in flushing collar)						Position Sampler			Sample Collection Checks (probe located at sampling zone in Westbay casing)						Comments (volume recovered)
	Shoe Out Run	Shoe Out Valve	Close Valve	Check Vacuum	Open Valve	Apply Vacuum	Locate Port	Land Probe	Arm Out	Pressure in Westbay ()	Shoe Out ()	Zone Pressure ()	Open Valve	Zone Pressure ()	Close Valve	Shoe In Westbay ()
6 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	121.36	✓	115.15	✓	✓	✓	121.37
7 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	94.08	✓	87.28	✓	✓	✓	94.07
7 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	94.00	✓	87.23	✓	✓	✓	94.00
7 3	✓	✓	✓	✓	✓	✓	✓	✓	✓	93.95	✓	87.23	✓	✓	✓	93.94
7 4	✓	✓	✓	✓	✓	✓	✓	✓	✓	93.89	✓	87.23	✓	✓	✓	93.88
8 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	76.42	✓	70.22	✓	✓	✓	76.42
8 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	75.45	✓	70.22	✓	✓	✓	75.42
9 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	56.79	✓	51.77	✓	✓	✓	56.76
9 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	55.78	✓	51.78	✓	✓	✓	55.78
10 1	✓	✓	✓	✓	✓	✓	✓	✓	✓	50.18	✓	45.28	✓	✓	✓	50.19
10 2	✓	✓	✓	✓	✓	✓	✓	✓	✓	50.16	✓	45.27	✓	✓	✓	50.14
10 3	✓	✓	✓	✓	✓	✓	✓	✓	✓	50.11	✓	45.26	✓	✓	✓	50.08
10 4	✓	✓	✓	✓	✓	✓	✓	✓	✓	50.04	✓	45.26	✓	✓	✓	50.04
10 5	✓	✓	✓	✓	✓	✓	✓	✓	✓	49.99	✓	45.26	✓	✓	✓	49.94
10 6	✓	✓	✓	✓	✓	✓	✓	✓	✓	49.96	✓	45.25	✓	✓	✓	49.95

Additional Comments: (pH, turbidity, S.C., etc.)

Project: Roosevelt Field Mall
Monitoring Well No.: S 2 P - 14
Sampling Zone No(s): 1 - 10

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Ground

Groundwater Sampling

Field Data Sheet

Date: Sept 19, 2011
 Start Time: 09:14 Atm. Rdg: 14.81
 End Time: 17:50 Atm. Rdg: 14.76
 Operators: JG DEE CWT

Port No.	Surface Function Tests (probe in flushing collar)						Position Sampler						Sample Collection Checks (probe located at sampling zone in Westbay casing)						Comments (volume recovered)
	Shoe Out Valve	Close Valve	Check Vacuum	Open Valve	Apply Vacuum	Close Valve	Locate Port	Arm Out	Land Probe	Pressure in Westbay ()	Shoe Out	Zone Pressure ()	Open Valve	Zone Pressure ()	Close Valve	Shoe In	Pressure in Westbay ()		
10 7	✓	✓	✓	✓	✓	✓	✓	✓	✓	49.91	✓	45.26	✓	45.25	✓	✓	✓	49.89	
10 8	✓	✓	✓	✓	✓	✓	✓	✓	✓	49.88	✓	45.26	✓	45.25	✓	✓	✓	49.84	
10 9	✓	✓	✓	✓	✓	✓	✓	✓	✓	49.82	✓	45.27	✓	45.26	✓	✓	✓	49.82	
10 10	✓	✓	✓	✓	✓	✓	✓	✓	✓	49.78	✓	45.27	✓	45.25	✓	✓	✓	49.76	
10 11	✓	✓	✓	✓	✓	✓	✓	✓	✓	49.75	✓	45.28	✓	45.27	✓	✓	✓	49.73	

Old Roosevelt Field Remedial Design
Multiport Well Water Quality Parameters
Well No. 51P - 14

Time	Port	pH	Specific Conductivity (mS/cm ⁹)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
09.22	1	6.01	0.106	9.15	5.2	17.11	1.6
10.10	2	6.49	0.144	9.90	93.8	18.53	2.5
11.15	3	5.82	0.113	8.40	-60.0	18.35	1.5
11.50	4	5.43	0.107	7.31	96.2	17.11	0.90
12.50	5	5.87	0.216	9.69	90.2	16.65	2.8
13.35	6	5.97	0.295	10.60	101.9	16.88	0.85
14.05	7	5.84	0.249	9.33	108.5	16.96	1.9
15.00	8	5.56	0.181	9.73	148.7	16.81	0.95
15.20	9	11.19	1.228	8.24	34.1	17.05	1.3
15.50	10	11.38	0.927	6.29	14.2	16.57	2.1

Acronyms:

°C - degrees Celsius

mg/L - milligrams per liter

mS/cm⁹ - milli-Siemens per centimeter

NTU - nephelometric turbidity unit

Appendix F

Low Flow Sampling Forms

**LOW FLOW GROUNDWATER SAMPLING PURGE RECORD
OLD ROOSEVELT FIELD MALL**

DATE: 9/12/2011

SAMPLERS: 30-4 DZ

WEATHER CONDITIONS: Sunny & 80°F
SAMPLE ID: GWWX-10019/FAB

CLP ID: B91M98

WELL #: GWOX10019

DEPTH OF PUMP INTAKE: 200'

SCREENED/OPEN BOREHOLE INTERVAL 100' **ft TIC or ft BGS (circle one)**
SAMPLE TIME: 16:45 **SAMPLE FLOW RATE:** 400 ml/minute

**Instrument Type/Model:
Complete and/or Circle at right**

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values DO = 0.3 - 10 mg/L
Specific Conductivity (µS/cm)

Redox Potential = -100 - +600 mV

Turbidity = 0 - >500 NTUs
TDS: 1,000 mS/cm = 1 mS/cm

DO = 0.99 mg/L

Initial TIC 23.08 Top of Stick Up
22.74 TIC

OLD ROOSEVELT FIELD MALL
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 9/12/11

SAMPLERS: CW, ME

WEATHER CONDITIONS: Sunny, ~80°F
SAMPLE ID: GwX-1002 O/R AB

CLP ID: B9 M97

DEPTH OF PUMP INTAKE:

ft TIC or ft BGS (circle one)

SCREENED/OPEN BOREHOLE INTERVAL ft TIC or ft BGS (circle one)
SAMPLE TIME: SAMPLE FLOW RATE:
mL/minute

Instrument Type/Model:
Complete and/or Circle at right

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)	Instrument:
											556 M/S
24-Hour	gallons/liters (circle one)	ft TIC / ft BGS (circle one)	Units: ft bgs or TIC (circle one)	ft TIC / ft BGS (circle one)	SU	S/cm μS/cm (circle one)	mg/L (not %)	Units: °C	Units: mV	NTUs	
1524	23.02	500		7.60	0.813	4.66	16.06	-16.8	37.5		
1529	23.24	440		7.31	0.978	0.79	14.91	-133.1	42.0		
1634	23.27	480		7.41	0.995	0.42	14.95	-162.3	31.6		
1639	23.27	500		7.43	0.999	0.34	15.02	-186.7	28.4		
1544	23.19	440		7.46	0.999	0.30	15.11	-202.3	25.9		
1549	23.16	490		7.55	0.999	0.31	15.06	-219.5	24.4		
1553	23.15	500		7.56	1.000	0.29	15.05	-206.1	23.2		
1558	23.15	500		7.55	0.998	0.21	15.14	-214.2	24.5		
1603	23.07	450		7.57	0.999	0.21	15.27	-207.1	23.5		
1608	23.09	450		7.58	1.001	0.24	15.07	-216.9	22.6		

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 mL/min during purging or 250 mL/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values DO = 0.3 - 10 mg/L
Spec. Conductivity (μS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 μS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Turbidity = 0 - >500 NTUs
Redox Potential = -100 - +600 mV
Note: 1,000 μS/cm = 1 mS/cm

**OLD ROOSEVELT FIELD MALL
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD**

DATE: 9/12/11

Samplers: C.W. M.E.

WELL #: GwX-10020

DEPTH OF PUMP INTAKE:

WEATHER CONDITIONS: Sunny, ~86°F
SAMPLE ID: FWX-10026/RAAB

ft TIC or ft BGS (circle one)

ff TIC er ff BGS (circle one)

SAMPLE TIME: 17.05 SAMPLE FLOW RATE: 1.00 ml/minute

CLP ID: B9M97

Instrument Type/Model:
Complete and/or Circle at right

Instrument Type/Model: Complete and/or Circle at right		YSI Model # <u>55-6 M/S</u>		<u>1 Horiba U-22</u> (circle one)		Instrument: <u>2020c</u>				
CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN	pH	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. °C	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	(gallons) (circle one)	(TIC) (circle one)	ft BGS Units: ft bgs or TIC (circle one)	ft TIC / ft BGS (circle one)	SU	S/cm, $\mu\text{S}/\text{cm}^{\circ}\text{C}$ $\mu\text{S}/\text{cm}$ (circle one)	mg/L (not %)	Units: °C	mV	NTUs
16:13	23.03	450		2.58	0.999	0.20	18.09	-219.2	22.6	
16:18	22.99	450		7.58	0.999	0.21	15.05	-215.0	27.0	
16:23	22.97	450		7.60	0.999	0.17	15.05	-244.3	23.5	
16:28	10	450		7.59	0.999	0.17	15.03	-218.3	22.2	
16:33	23.00	450		7.56	0.999	0.17	15.02	-220.1	23.4	
16:38	23.00	450		7.56	0.999	0.18	15.02	-266.7	23.5	
16:43	23.00	450		7.55	0.999	0.19	15.02	-219.4	23.0	
16:48	23.03	450		7.55	0.998	0.16	15.01	-235.5	22.9	
16:53	23.03	450		7.55	0.999	0.19	15.01	-246.7	23.5	
16:58	23.04	450		7.55	0.999	0.16	15.01	-245.8	24.7	

17.05 - SAMPLE FLAME
Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The indicator parameters have stabilized for three consecutive readings when the measurements indicated in parenthesis.

Typical values

DO = 0.3 - 10 mg/L
Spec. Conductivity (µS)

Redox Potential = -100 - +600 mV

Turbidity = 0 - >500 NTUs

TIC = Top of Inner Casing BGS = Below Ground Surface

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OLD ROOSEVELT FIELD MALL

LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

Initial DTR = 2250 °C

DATE: 9/20/11

SAMPLERS: *Our*

WEATHER CONDITIONS: Fair, ~65°F
SAMPLE ID: MW-015/AB

CLP ID: B9MC4

DEPTH OF PUMP INTAKE: 240 ft TIC or ft ~~TGS~~ (circle one)
SCREENED/OPEN BOREHOLE INTERVAL: 235 - 245 ft TIC or ft ~~TGS~~ (circle one)
SAMPLE TIME: 09:55 SAMPLE FLOW RATE: 200 ml/minute

Instrument Type/Model: Complete and/or Circle at right							YSI Model # <u>556 M/S</u>	<u>Horiba U-22</u>	(circle one)	Instrument: La Motte 2020
CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)
24-Hour	(gallons / liters (circle one))	ft TIC / ft BGS (circle one)	Units: mL/min	ft TIC / ft BGS (circle one)	SU	S/cm, mS/cm° or μS/cm (circle one)	mg/L <u>(not %)</u>	Units: °C	mV	NTUs
0746	27.58	500		6.13	0.690	1.15	18.01	-144.3	32	
0745	27.61	500		6.91	0.611	0.26	17.84	-146.4	OR	
0750	27.59	280		3.61	0.507	0.45	17.87	50.1	600	
0805	27.60	300		4.04	0.509	0.43	18.15	95.1	906	
0810	27.61	480		5.08	0.470	0.42	17.94	96.1	OR	
0815	27.63	480		5.12	0.424	0.32	17.86	91.3	OR	
0820	27.63	480		5.08	0.419	0.29	17.80	97.7	450	
0825	27.63	340		5.08	0.422	0.28	17.92	103.4	190	
0830	27.63	340		5.05	0.418	0.32	18.02	105.8	120	
0835	27.64	340		5.08	0.423	0.34	18.05	106.4	100	

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The drawdown is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

DO = 0.3 - 10 mg/L	Redox Potential = -100 - +600 mV	Turbidity = 0 - >500 NTUs
Spec. Conductivity ($\mu\text{S}/\text{cm}$) = 0.001 - 5,000: up to 10,000 in industrial	-55,000 in high salt content water	Note: 1,000 $\mu\text{S}/\text{cm} = 1 \text{ mS}/\text{cm}$

TIC = Top of Inner Casing BGS = Below Ground Surface

OE = Over-Range

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OLD ROOSEVELT FIELD MALL
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 4/20/11

SAMPLERS: CW

WEATHER CONDITIONS: Rain, 65°F
SAMPLE ID: MW-015/2AB

CLP ID: B9mc4

WELL #: MW-015

DEPTH OF PUMP INTAKE:

ft TIC or ft BGS (circle one)

SCREENED/OPEN BOREHOLE INTERVAL

ft TIC or ft BGS (circle one)

SAMPLE TIME: 0155 SAMPLE FLOW RATE: 200 ml/minute

Instrument Type/Model:
 Complete and/or Circle at right

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)	Instrument: 2020
											YSI Model # 556 M/S / Horiba U-22 (circle one)
0840	27.64	340		5.05	0.427	0.47	18.06	109.8	95		
0843	27.64	340		5.09	0.426	0.46	18.04	110.9	90		
0850	27.64	346		5.11	0.423	0.39	18.11	110.3	85		
0855	27.64	340		5.10	0.417	0.33	18.14	108.5	85		
0900	16	27.67	300	5.14	0.414	0.32	18.12	108.6	85		
0905	27.67	300		5.18	0.411	0.36	18.13	107.0	85		
0910	27.67	306		5.09	0.406	0.34	18.13	109.2	95		
0915	27.70	360		5.14	0.400	0.31	18.06	110.3	95		
0925	27.72	440		5.08	0.391	0.41	18.07	117.1	70		
0930	27.72	440		5.04	0.396	0.51	18.26	117.3	65		

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values
 DO = 0.3 - 10 mg/L
 Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

TIC Potential = -100 - +600 mV
 Turbidity = 0 - >500 NTU
 Redox Potential = 0 - >500 mV

30

**LOW FLOW GROUNDWATER SAMPLING PURGE RECORD
OLD ROOSEVELT FIELD MALL**

DATE: 4/20/14

SAMPLERS: CW

WEATHER CONDITIONS: Rain ~ 65°F
SAMPLE ID: Mu-olsfars

WELL #: MUR-015

SAMPLERS: CW

DEPTH OF PUMP INTAKE: 26.0 ft TIC or ft BGS (circle one)
SCREENED/OPEN BOREHOLE INTERVAL ft TIC or ft BGS (circle one)
SAMPLE TIME: 0105 SAMPLE FLOW RATE: 200 ml/minute

WEATHER CONDITIONS: Rain
SAMPLE ID: Mu-015 RAB

CLP ID: B9 MC 4

**Instrument Type/Model:
Complete and/or Circle at right**

YSI Model # 556 MB / Horiba U-22 (circle one) Instrument:

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The flow rate should not exceed 500 ml/min during sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values

$\text{DO} = 0.3 - 10 \text{ mg/L}$	Redox Potential = $-100 - +600 \text{ mV}$
Spec. Conductivity ($\mu\text{S/cm}$) = $0.01 - 5,000$; up to 10,000 in industrial	, $-55,000$ in high

Turbidity = 0 ->500 NTUs
Rate: 1,000 μ S/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

D_T = 28.56 T_{DC}

Time 07:30

OLD ROOSEVELT FIELD MALL
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 9/20/11

SAMPLERS: J 9-4 D 2

WELL #: SW-11

DEPTH OF PUMP INTAKE: 300'

WEATHER CONDITIONS: Overcast ~ 60°F
SAMPLE ID: MW-0111RAB
CLP ID: 9MC5SCREENED/OPEN BOREHOLE INTERVAL 0' ft TIC or ft BGS (circle one)
SAMPLE TIME: 0858 SAMPLE FLOW RATE: 400 ml/minuteInstrument Type/Model:
Complete and/or Circle at right

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	Instrument: ft BGS (circle one)	
										TSI Model # 556MPS/Horiba U-22 line # 013997	
0740	-	28.66	400		5.36	0.275	1.66	18.11	19980	3.80	
0745	28.7	400			5.29	0.324	0.87	18.07	20600	59.9	
0750	28.72	400			6.04	0.390	0.78	18.02	94.5	19.5	
0806	28.73	400			6.10	0.432	0.66	18.02	64.5	11.9	
0806	28.75	400			5.86	0.387	0.55	18.01	86.3	13.3	
0810	28.75	400			5.79	0.379	0.56	18.02	86.1	10.35	
0816	28.75	400			5.72	0.369	0.61	18.04	103.2	9.85	
0821	28.75	400			5.55	0.357	0.52	18.03	112.5	8.02	
0826	5	400			5.44	0.351	0.53	18.02	126.2	8.41	
0831	28.76	400			5.36	0.347	0.49	18.06	137.5	1.9	

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values DO = 0.3 - 10 mg/L Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs

**OLD ROOSEVELT FIELD MALL
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD**

$$P_D = 0.001$$

as to as to $n^{1/2}$

$\Delta T_w - 28.58, 30^\circ$

DATE: 9/20/11

SAMPLERS: 798 D2
DATE: 9/20/11

WEH #:

SAMPLERS: Jv & Dz
WEATHER CONDITIONS: overcast 6:00¹²
SAMPLE ID: MU-0112AB
CHP ID: B9MC5

BGS (circle one)

DEPTH OF PUMP INTAKE: 300'

SCREENED/OPEN BOREHOLE INTERVAL 100 ft TIC or ft BGS (circle one)
SAMPLE TIME: 00:00 SAMPLE FLOW RATE: 100 ml/minute

**Instrument Type/Model:
Complete and/or Circle at right**

Instrument Type/Model: Complete and/or Circle at right		YSI Model # 526 MPS Other (specify) One # 013993		Horiba U-22 (circle one)		Instrument: Larmotte 202				
CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN	pH	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY Line# 1796 (± 10%)
0826	28.77 ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	Units: ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	400	5.30	0.345	0.47	18.07	14.7.1	2.47	
0841	28.79	400	6.28	0.344	0.49	18.13	134.2	6.40		
0846	28.79	400	5.24	0.342	0.46	18.17	163.8	7.47		
0851	28.8	400	5.22	0.341	0.47	18.17	169.7	8.20		
0856	28.8	400	5.20	0.340	0.45	18.14	175.5	7.98		
0858	total volume purged	7.5 gal	no							

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The flow rate is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values

Redox Potential = -100 - +600 mV
 ~10 000 in industrial ~55 000 in high

Turbidity = 0 - >500 NTUs
Rate: 1,000 $\mu\text{S}/\text{cm}$ = 1 mS/cm

Initial DO = 27.46 ft

10 + 2

OLD ROOSEVELT FIELD MALL LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 9/16/11

WELL #: MW-025

SAMPLERS: CW

WEATHER CONDITIONS: ~55°, Sunny
SAMPLE ID: MW-025 / RL4B
CLP ID: B9mc6

DEPTH OF PUMP INTAKE: 241 ft TIC or ft BGS (circle one)

SCREENED/OPEN BOREHOLE INTERVAL 236-246 ft TIC or ft BGS (circle one)
SAMPLE TIME: 0855 SAMPLE FLOW RATE: 200 ml/minute

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10%)	Instrument Model #	
											YSI Model #	Other (specify)
0750	27.58	440			5.94	0.452	1.92	18.04	138.8	7.25		
0756	27.59	440			5.97	0.522	0.85	17.85	71.4	OR		
0801	27.59	440			6.05	0.604	0.39	17.77	2.6	180		
0806	27.58	440			6.06	0.566	0.36	17.68	9.3	100.9		
0811	27.56	440			5.93	0.524	0.33	17.69	33.6	76.7		
0816	27.49	500			5.65	0.485	0.36	17.10	67.8	41.0		
0821	27.42	500			5.47	0.470	0.30	17.81	89.0	22.6		
0826	27.37	380			5.35	0.462	0.28	18.03	102.8	17.7		
0831	27.33	380			5.30	0.460	0.33	18.10	109.1	14.2		
0836	27.30	380			5.25	0.458	0.29	17.98	18.7	12.5		

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Spec. Conductivity (μ S/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 μ S/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

OR = Over-range

Final DO = 0.3 ppm

2 of 2

OLD ROOSEVELT FIELD MALL LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 9/1/61/11

SAMPLERS: *CW*

WELL #: Mw-025

DEPTH OF PUMP INTAKE: 2 m

WEATHER CONDITIONS: ~55°F, Sunny
SAMPLE ID: MW-025/2A B

CLP ID: B9MC6

SCREENED/OPEN BOREHOLE INTERVAL 236-216 ft TIC or ~~the BGS~~(circle one)
SAMPLE TIME: 0855 **SAMPLE FLOW RATE:** 200 ml/minute

Instrument Type/Model: Complete and/or Circle at right		YSI Model # <u>556</u> <u>mPS</u>		/ Horiba U-22 (circle one)	
CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH (± 0.1 SU)
08411	27.25	380			5.19 0.456 0.30
0346	27.22	380			5.16 0.454 0.31
0351	27.19	380			5.14 0.453 0.30
OK 55	—	—	—	—	—
SAMPLING TIME					
C. E. 12/11/06		Instrument: 2020		TURBIDITY (± 10%)	
Other (specify)		SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)
24-Hour		ft TIC / ft BGS (circle one)	S/cm, mS/cm or µS/cm (circle one)	Units: °C	mV
<u>Gallons</u> liters (circle one)		Units: m/min	mg/L (not %)		NTUs

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV
 Spec. Conductivity ($\mu\text{S}/\text{cm}$) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water.
 Turbidity = 0 - >500 NTUs
 Note: 1,000 $\mu\text{S}/\text{cm} = 1 \text{ mS/cm}$

TIC = Top of Inner Casing BGS = Below Ground Surface

OLD ROOSEVELT FIELD MALL
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 9/16/2011

SAMPLERS: 100 DE =

WEATHER CONDITIONS: Sunny ~60°F
 SAMPLE ID: MW-021 RA13
 CLP ID: B9MC4

WELL #: 111-21
 DEPTH OF PUMP INTAKE: 290'

SCREENED/OPEN BOREHOLE INTERVAL 14' ft TIC or ft BGS (circle one)
 SAMPLE TIME: 09:35 SAMPLE FLOW RATE: 450 ml/minute

ft TIC or ft BGS (circle one)

PID = 4.2 ppm.
 Page 1 of 2

Date - 28.30' from TIC
 Time 0730

Instrument Type/Model:
 Complete and/or Circle at right

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY 2; 100 NTU (± 10%)	Instrument: Lamotte 2020
0750	-	28.35	400		8.11	0.576	1.01	18.02	156.6	14	
0800	28.36	400			7.85	0.601	0.63	18.06	155.0	140	
0806	28.24	400			7.87	0.626	0.55	17.47	147.1	50	
0811	28.13	430			7.66	0.584	0.53	17.84	131.1	33	
0818	28.01	430			7.30	0.502	0.48	17.82	102.7	23	
0828	27.88	400			7.10	0.456	0.41	17.74	86.7	18	
0831	27.85	400			7.05	0.438	0.31	17.68	80.5	17	
0836	27.76	400			6.95	0.426	0.40	17.62	81.1	20	
0842	27.69	400			6.87	0.405	0.40	17.69	81.4	18	
0848	27.59	400			6.83	0.397	0.45	17.66	82.7	22	

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values DO = 0.3 - 10 mg/L Spec. Conductivity ($\mu\text{S}/\text{cm}$) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 $\mu\text{S}/\text{cm}$ = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

▷ TDS = 28-30' from TDC
Time 07:30^m
PDI = 4.28 Pm

OLD ROOSEVELT FIELD MALL
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 9/16/2011

SAMPLERS: JDE 4DE

WEATHER CONDITIONS: Sunny 60°F
SAMPLE ID: 7116-0211RAB

CLP ID: 3A m c 7

WELL #: 7116-27

DEPTH OF PUMP INTAKE: 20'

ft TIC or ft BGS (circle one)

SCREENED/OPEN BOREHOLE INTERVAL JA ft TIC or ft BGS (circle one)
SAMPLE TIME: 0935 SAMPLE FLOW RATE: 600 ml/minute

Page 28 of 2

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	Instrument: LaMotte 2020	
										YSI Model #	Other (specify) Finc# 013197 / Horiba U-22 (circle one)
0854	gallons/liters (circle one)	ft TIC / ft BGS (circle one)	Units: ft bgs or TIC (circle one)	ft TIC / ft BGS (circle one)	6.87	0.345	9.44	18.46	80.8	17	
0909	10	27.46	400	6.84	0.345	0.48	18.71	81.2	16		
0905	27.4	400	6.82	0.386	0.57	18.53	82.9	24			
0910	27.37	400	6.79	0.383	0.59	18.38	84.7	19			
0915	27.32	400	6.76	0.382	0.62	18.48	85.1	20			
0920	27.31	400	6.78	0.379	0.64	18.57	83.9	23			
0925	27.33	400	6.72	0.373	0.66	18.70	83.0	26			
0930	27.35	400	6.76	0.368	0.72	18.26	83.5	30			
0935	Sample										
	Total water purged		13.65 g	11.8m							

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values

DO = 0.3 - 10 mg/L
Spec. Conductivity ($\mu\text{S}/\text{cm}$) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 $\mu\text{S}/\text{cm}$ = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Turbidity = 0 - >500 NTUs
Redox Potential = -100 - +600 mV

OLD ROOSEVELT FIELD MALL
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 9/20/11

SAMPLERS: J 14 DE

WEATHER CONDITIONS: Rain ~65°
SAMPLE ID: MW-035 RAB

CLP ID: B9mce8

WELL #: 700-735
DEPTH OF PUMP INTAKE: 24'

SCREENED/OPEN BOREHOLE INTERVAL ft TIC or ft BGS (circle one)
SAMPLE TIME: 1213 SAMPLE FLOW RATE: 40 ml/minute

Page 1 of 2
ft TIC or ft BGS (circle one)

YSI Model # 566 DS / Horiba U-22
Other (specify) 2139A7 (circle one)

Instrument Type/Model:
Complete and/or Circle at right

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN	pH	SPECIFIC CONDUCTIVITY ($\pm 3\%$)	DISSOLVED OXYGEN ($\pm 10\%$)	TEMP.	REDOX POTENTIAL ($\pm 10 \text{ mV}$)	TURBIDITY ($\pm 10\%$)	Instrument: LaMotte
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one)	Units: ft bgs or TIC (circle one)	Units: ml/min	(circle one)	ft TIC / ft BGS	SU	mg/L (not %)	mV	NTUs	
1044	21.62	400			7.22	0.139	0.20	17.87	17.1	ORV	
1046	21.65	400			7.38	0.156	0.15	17.84	-10.3	ORV	
1052	21.67	400			7.39	0.177	0.66	18.45	-68.3	12.85	
1056	21.67	400			7.18	0.590	0.40	15.68	-68.0	92.1	ORV
1102	21.67	400			7.09	0.577	0.37	18.57	-53.0	13.31	ORV
1107	21.68	400			7.08	0.576	0.26	18.59	-53.6	12.32	ORV
1112	21.68	400			7.17	0.604	0.17	18.33	-85.6	0R V	
1117	5	21n70	400		6.72	0.535	0.57	19.59	-22.9	35.53	ORV
1122	21.7	400			6.14	0.427	0.70	17.64	25.1	14.1	
1127	21.7	400			5.95	0.455	0.76	17.53	60.7	56.3	

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values DO = 0.3 - 10 mg/L
Spec. Conductivity ($\mu\text{S}/\text{cm}$) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 $\mu\text{S}/\text{cm} = 1 \text{ mS}/\text{cm}$

TIC = Top of Inner Casing BGS = Below Ground Surface

Turbidity = 0 - >500 NTUs
Redox Potential = -100 - +600 mV

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LOW FLOW GROUNDWATER SAMPLING PURGE RECORD
OLD ROOSEVELT FIELD MALL

DATE: 9/20/11

WELL #: MW-3T

SAMPLERS: Cw

WEATHER CONDITIONS: Rain, ~65 °F
SAMPLE ID: MW-03T/R4B

CLP ID: B9MC9

Instrument Type/Model:
Complete and/or Circle at right

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.1 FT)	pH (± 0.1 SU)	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	Instrument:	
										ft TIC or ft BGS (circle one)	ft TIC or ft BGS (circle one)
24-Hour	gallons / liters (circle one)	ft TIC (circle one)	ft BGS (circle one)	Units: ml/min	7.82	0.364	3.00	18.76	15.0	7.8	
1030	22.12	600			7.15	0.408	0.88	17.67	60.9	6.8	
1035	22.13	360			6.18	0.342	0.67	17.71	82.8	4.6	
1040	22.14	360			5.69	0.388	0.58	17.63	99.1	6.9	
1045	22.14	360			5.47	0.322	0.51	17.45	166.4	3.6	
1050	22.16	360			5.42	0.371	0.48	17.37	115.0	3.4	
1055	22.20	360			5.38	0.369	0.40	17.32	118.2	3.9	
1100	22.20	360			5.26	0.367	0.37	17.31	124.9	3.9	
1105	5	2220	360		5.32	0.367	0.34	17.26	125.7	3.6	
1110	22.23	360			5.34	0.366	0.29	17.25	127.2	3.4	
1115											

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during sampling or 250 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Spec. Conductivity ($\mu\text{S}/\text{cm}$) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 $\mu\text{S}/\text{cm}$ = 1 mS/cm Turbidity = 0 - >500 NTUs

TIC = Top of Inner Casing BGS = Below Ground Surface

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**OLD ROOSEVELT FIELD MALL
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD**

DATE: 9/10/01

WELL #: MW-31
DEPTH OF PUMP INTAKE: ~200

SAMPLERS: (14)

SAMPLERS: CW
WEATHER CONDITIONS: Partly -65°F
SAMPLE ID: Mar-03 TRNG

SCREENED/OPEN BOREHOLE INTERVAL **ft TIC or ft BGS (circle one)**
SAMPLE TIME: **1130** **SAMPLE FLOW RATE:** **200** **mV/minute**

SAMPLERS: CW
WEATHER CONDITIONS: Partly cloudy
SAMPLE ID: MBR-0311RAB

SCREENED/OPEN BOREHOLE INTERVAL 10ft **ft TIC or ft BGGS (circle one)**
SAMPLE TIME: 1130 **SAMPLE FLOW RATE:** 200 ml/minute

SAMPLERS: CW
WEATHER CONDITIONS: Partly cloudy
SAMPLE ID: MBR-0311RAB

CLP ID: B9MC9

**Instrument Type/Model:
Complete and/or Circle at**

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Turbidity = 0 - >500 NTUs
 Typical values pH = 5.5-8.5 (cm) - 2.01 - 5.000 um to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 μ S/cm = 1 mS/cm
 well is considered stabilized and ready to use.

In. / Out. DTW: 2017' TIC 4'
DO: 0.8 ppm

OLD ROOSEVELT FIELD MALL
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 9/10/2011

WELL #: MW-8D

SAMPLERS: DE

WEATHER CONDITIONS: Partly ~ 65°F
SAMPLE ID: MW-9804AB

CLP ID: D9 N.D.D.O

Instrument Type/Model:
Complete and/or Circle at right

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. °C	REDOX POTENTIAL (± 10 mV)	TURBIDITY NTUs	Instrument: Larco 2000
											Instrument: Larco 2000
24-Hour	gallons / liters (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	ft TIC / ft BGS (circle one) Units: ft bgs or TIC (circle one)	ft TIC / ft BGS (circle one)	6.13	0.181	2.51	15.17	70.9	11.0	
1325	22.13	400	5.85	0.179	0.69	15.02	60.6	11.06			
1330	22.08	400	5.55	0.148	0.48	15.01	24.2	1.75			
1335	22.02	400	5.49	0.133	0.46	15.02	16.9	1.15			
1340	22.01	400	5.46	0.138	0.36	15.01	16.6	1.00			
1345	22.00	400	5.43	0.132	0.31	15.01	23.0	1.09			
1350	21.98	400	5.34	0.140	0.28	15.00	27.1	0.95			
1355	21.99	400	5.40	0.141	0.18	15.07	19.2	0.90			
1400	21.85	400	5.44	0.143	0.27	15.07	18.8	0.85			
1405	21.83	400	5.45	0.140	0.24	15.07	18.6	0.91			
1410	21.79	400	5.45	0.140	0.24	15.07	18.6	0.91			

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values DO = 0.3 - 10 mg/L Spec. Conductivity (μ S/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water. Note: 1,000 μ S/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Redox Potential = -100 - +600 mV
Turbidity = 0 - >500 NTUs

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OLD ROOSEVELT FIELD MALL LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 9/29/2001

SAMPLERS: DEC

WELL #: MW-8D

DEPTH OF PUMP INTAKE: ~700'

WEATHER CONDITIONS: barn - 65°F
SAMPLE ID: Mu-0701AAB

SCREENED/OPEN BOREHOLE INTERVAL (ft) **ft TIC ORFT BGs (circle)**
SAMPLE TIME: 14:00 **SAMPLE FLOW RATE: 1.0 ml/minute**

**SCREENED/OPEN BOREHOLE INTERV
SAMPLE TIME: 1420 SAMPLE FL**

CLP ID: B9 M30

Instrument Type/Model:
Complete and/or Circle at right

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values DO = 0.3 - 10 mg/L Redox Potential = -100 - +600 mV Spec. Conductivity ($\mu\text{S}/\text{cm}$) = 0.01 - 5 000; up to 10 000 in industrial; ~55 000 in high salt content water. Turbidity = 0 - >500 NTUs Note: 1 000 $\mu\text{S}/\text{cm}$ = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

DTW - 19.3 from 10c
Time: 13 20

OLD ROOSEVELT FIELD MALL
LOW FLOW GROUNDWATER SAMPLING PURGE RECORD

DATE: 9/20/2011
SAMPLERS: JG & MZ

WEATHER CONDITIONS: Overcast / rain ~60°
SAMPLE ID: MW-125RGS

CLP ID: B95ND1

WELL #: MW-125

DEPTH OF PUMP INTAKE: 100

ft TIC or ft BGS (circle one)

SCREENED/OPEN BOREHOLE INTERVAL 90-100 ft TIC or ft BGS (circle one)
SAMPLE TIME: 1421 SAMPLE FLOW RATE: 400 ml/min/minute

page 1 of 1

PID = 0.6 ppm

Instrument Type/Model:
Complete and/or Circle at right

YSI Model # 556 mPS / Horiba U-22
Other (specify) Pipe # 13997 (circle one)

CURRENT TIME	VOLUME PURGED	DEPTH TO WATER	FLOW RATE	DRAWDOWN (± 0.3 FT)	pH	SPECIFIC CONDUCTIVITY (± 3%)	DISSOLVED OXYGEN (± 10%)	TEMP. (± 10%)	REDOX POTENTIAL (± 10 mV)	TURBIDITY (± 10% NTUs)
1338	19.28 400			9.17	0.132	6.95	16.37	81.2	13	
1343	19.3 400			9.22	0.140	6.67	16.47	81.0	13	
1348	5	19.3 400		9.40	0.182	7.05	16.42	74.6	12	
1353	19.3 400			9.40	0.182	8.97	16.38	75.6	15	
1358	19.3 400			9.24	0.135	6.97	16.38	83.3	12	
1403	19.3 400			9.40	0.184	7.05	16.34	76.6	11	
1408	19.3 400			9.27	0.138	7.04	16.34	84.9	10	
1413	19.3 400			9.18	0.130	6.91	16.35	88.0	10	
1418	19.3 400			9.19	0.117	7.01	16.34	89.2	9.2	
1421	Total vol purged = 9 gallons	collect sample thick enough to collect sample with min. sizeable probably sample	*	Discard	with min. sizeable probably sample	*	speedy collection of sample	conducitif sample		

Drawdown is not to exceed 0.3 feet. Flow rate should not exceed 500 ml/min during purging or 250 ml/min during sampling. Readings should be taken every three to five minutes. The well is considered stabilized and ready for sampling when the indicator parameters have stabilized for three consecutive readings by the measurements indicated in parenthesis.

Typical values DO = 0.3 - 10 mg/L
Spec. Conductivity (µS/cm) = 0.01 - 5,000; up to 10,000 in industrial, ~55,000 in high salt content water.

Redox Potential = -100 - +600 mV

Turbidity = 0 - >500 NTUs
µS/cm = 1 mS/cm

TIC = Top of Inner Casing BGS = Below Ground Surface

Old Roosevelt Field Remedial Design

Multipoint Well Water Quality Parameters

Well No. Supply Well No. 10 Deno. 11

Time	Well Point	pH	Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
07:35	GWP-11	5.42	0.306	3.21	171.5	15.81	0.20
07:39	GWP-10	5.34	0.273	2.97	169.3	15.65	0.29

Acronyms:

°C - degrees Celsius

mg/L - milligrams per Liter

$\text{mS/cm} \times 10^3$ - milli-Siemens per centimeter

NTU - nephrolometric turbidity unit

Old Roosevelt Field Remedial Design

Multipoint Well Water Quality Parameters
Well No. 8068 Date Sampled 03-05-2014 At Source At Stream

Time	Port	pH	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)	Temperature (°C)	Turbidity (NTU)
10:30	TAP	6.05	0.306	5.68	113.9	16.01	0.25

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Appendix G

Data Usability Summary

Data Quality Assessment

1.0 Sampling Summary

CDM Federal Programs Corporation (CDM Smith) performed field activities to support the Remedial Action at the Old Roosevelt Field Contaminated Groundwater Area Site (the Site). The purpose of this assessment is to evaluate the usability of the data collected and to determine whether they meet the quality objectives and user requirements outlined in the Old Roosevelt Field Final Quality Assurance Project Plan (Final QAPP) (CDM 2010). Sampling activities occurred from September 12, 2011 through September 20, 2011.

Table 1 summarizes the samples collected and discussed in this report. Table 2, the Data Usability Worksheet, summarizes the data validation actions and discusses the data quality and usability. This report presents the procedures used to collect, analyze, validate and assess the data and summarizes the usability of the data for the objectives listed below.

2.0 Project Objectives

The specific purpose of the 2011 groundwater sampling event was to verify the influent concentrations and support the design and construction of the groundwater extraction and treatment system; to evaluate the effectiveness of the groundwater extract system in capturing the contaminant plume; and to confirm that the discharge of treated water into Nassau County recharge basin 124 will meet the New York State Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) permit requirements on iron. Data collected in 2011 will be used to assist in the selection and construction of the groundwater treatment system, evaluate the capture zone of the groundwater extraction system, and evaluate the effectiveness of the groundwater extraction and treatment system in remediating the groundwater contamination.

2.1 Usability Summary

Qualified data is presented in the RI Report. Data that did not meet QC criteria were qualified during data validation as estimated “J” and are usable or as rejected “R” and are not usable; or usable but non-detect “U”, as appropriate.

For the definitive level data generated during the sampling investigation, several compounds in different parameter groups were rejected. Most of these were aluminum results in 8 samples, which were rejected due to Inductively Coupled Plasma (ICP) serial dilution failure. This rejected data is not usable for the objectives described in Section 2.0.

The volatile organic compounds (VOCs) rejected data represents 0.1 percent of all the VOC data. All other data results reported herein are usable as reported. The impact on data quality is further discussed under the Completeness section of this report, Section 5.5.

3.0 Summary of Field Activities

CDM Smith completed sampling activities in accordance with the Environmental Protection Agency (EPA) approved Old Roosevelt Final QAPP except for those documented in the field change requests (FCRs), which are summarized in Table 2.

Samples (Table 1) were collected and shipped to the following laboratories for analysis: EPA Contract Laboratory Program (CLP) laboratories, Chemtech Consulting Group and Sentinel, Inc., and the CDM Smith subcontract laboratory, Compuchem Laboratory. The Final QAPP defined the procedures to be followed and the data quality requirements for the field program.

Field changes and their impact on the project objectives are discussed in Table 2, the Data Usability Worksheet.

Matrix spike (MS) and matrix spike duplicates (MSD) or laboratory duplicates (Ds), field duplicates, and blank quality control (QC) samples were collected at the frequency described in the Final QAPP to assess the quality of the data. MS/Ds for the wet chemistry and metal analyses, and MS/ MSDs for the pesticides and polychlorinated biphenyls (PCBs) analyses were collected at a minimum frequency of 5 percent (1 out of every 20 samples). Field blanks were associated with each day of sample collection for well monitoring samples. Trip blanks were submitted with each cooler containing water samples for VOC analyses.

Samples were given CDM Smith identification (ID) numbers, but were submitted to the laboratories using an assigned CLP sample number. Field duplicate samples (blind duplicate samples submitted to the laboratories for confirmation analysis) were given a different CLP number than the original sample. After analytical results were received from the laboratory, field duplicate samples were renamed to their CDM Smith ID number, which is the same ID number as the original sample, but with a "D" added to signify the sample was a field duplicate.

4.0 Quality Assurance/ Quality Control (QA/QC)

Field quality assurance/quality control (QA/QC) objectives were accomplished through the use of appropriate sampling techniques and collection of field duplicates and blanks. Analytical QA/QC was assessed by internal QC checks, method and storage blanks, surrogate spikes, sample custody tracking, sample preservation, adherence to holding times, laboratory control samples (LCSs) and MS/Ds.

4.1 Analytical Methods and Data Validation Procedures

Samples were analyzed using the EPA approved methods shown in the footnotes of Table 1 and are consistent with the QAPP methods. These methods were utilized to achieve, where possible, the project quantitation limit goals listed in the Final QAPP.

The target compound list (TCL) and target analyte list (TAL) data were validated by EPA and CDM Smith data validators according to EPA Region 2 methodologies. Low and trace level VOCs and metals were validated using standard operating procedures (SOPs) described in Table 2. Water quality parameters were validated as specified in the Final QAPP (CDM 2010) and in Table 2, CDM-029A.

5.0 Data Quality Indicators (DQI)

QC parameters evaluated in the data review/validation and the corresponding data quality indicators (DQIs) are summarized in Figure A below. Sample results were reviewed using level IV evaluation, the highest level of data validation which utilizes the raw data.

Precision, accuracy, representativeness, comparability, completeness, and sensitivity are used as DQIs. These DQIs provide a mechanism for evaluating and measuring data quality throughout the project. Achievement of the project's quality objectives were measured from the DQI results assessed against

their measurement performance criteria. Worksheets #12 and 28 of the Final QAPP show the measurement performance criteria. These criteria are defined and their results discussed in the appropriate sections below. The figure below shows the QC parameters reviewed to evaluate the DQIs.

Figure A DQIs and Corresponding QC Parameters

Data Quality Indicators	QC Parameters Evaluated in Data Review/Validation
Precision	Relative Percent Difference (RPD) values of: 1) Laboratory Control sample (LCS)/LCS duplicate 2) Matrix Spike/Matrix Spike Duplicate (MS/MSD) 3) Field duplicates Relative Standard Deviation (RSD) values of: 1) Initial calibration verifications
Accuracy/Bias	Percent Recovery (%R) or Percent Difference (%D) values of: 1) Initial calibration and continuing calibration verification 2) LCS/LCSD 3) MS/MSD 4) Surrogate spikes 5) Serial dilution (Inductively Coupled Plasma [ICP] metals) 6) ICP inter-element interference check samples 7) Internal standards (%R and retention times) Results of: 1) Instrument and calibration blanks 2) Method (preparation) blanks 3) Trip blanks 4) Equipment rinsate blanks
Representativeness	Results of all blanks Sample integrity (Chain-of Custody and sample receipt forms) Holding times Compound identification (retention times, mass spectra, dual column confirmation) Sample extract cleanup Total versus dissolved metals correlation
Comparability	Sample-specific method reporting limits (MRLs) Sample collection methods Laboratory analytical methods
Completeness	Data qualifiers Laboratory deliverables Requested/reported valid results Field sample collection (primary and QC samples) Contract compliance (i.e., method and instrument QC within limits)
Sensitivity	Sample specific reporting limits (RLs) Adequacy of sample dilution

5.1 Precision

Precision is a quantitative term that estimates the reproducibility of a set of replicate measurements under a given set of conditions. It is defined as a measurement of mutual agreement between measurements of the same property, and is expressed in terms of relative percent difference (RPD) between duplicate determinations.

RPD is calculated as follows:

$$\text{RPD} = \text{absolute value } [(C_1 - C_2) / \{(C_1 + C_2) / 2\}] \times 100$$

Where: C_1 = Concentration of sample #1
 C_2 = Concentration of sample #2

For a given range, as the concentration increases the RPD decreases. Thus the absolute value is used for results that are close to the quantitation or reporting limits of the analysis or for one sample detection in a result pair. This is because results closer to the quantitation limits tend to show higher ranges and result in high RPDs even though the results may not be significantly different.

ABS is calculated as follows:

$$\text{ABS} = \text{absolute value } = C_1 - C_2$$

Analytical Data Precision

Analytical precision was based on the analytical requirements. The analytical precision for the reported data was determined by review of MS/MSD and laboratory duplicate results. No outliers were noted in the data validation reports. The data generally met the analytical requirements.

Field Data Precision

Field duplicate samples were collected in the same manner as the original samples but were collected in separate containers, given separate sample identifiers and treated as unique samples by the laboratory. The data assessor calculated the precision for the field duplicate data; results are shown on Tables 3-1 through 3-3.

Two tiers of criteria were applied to the field duplicate results. RPDs were only calculated when both values were detected at concentrations above two times the reporting limit or contract required quantitation limit (CRQL). The absolute difference (ABS) was calculated when one result was not detected or both results were reported at or below two times the reporting limit.

The field duplicate results indicate that field precision criteria were met except for one VOC (trichloro-fluoromethane) and one metal (sodium) result pair. Only the parent and field duplicate sample results were affected. Table 2 addresses the field duplicate evaluation and its impact on data usability.

5.2 Accuracy

Accuracy is a measurement of agreement for a given measurement against an accepted reference value. It is typically assessed through the analysis of matrix spike and calibration check samples, and expressed as a percent recovery.

Accuracy for the entire data collection activity is difficult to assess because several sources of error exist. Errors can be introduced by any of the following:

- Sampling procedure
- Field contamination
- Sample preservation and handling
- Sample matrix
- Sample preparation
- Analytical techniques

Accuracy was maximized through strict adherence to field sampling SOPs, the approved Final QAPP (CDM 2010) and the use of EPA approved methods for sample analyses. By following approved procedures, sampling events should provide results that are representative of environmental conditions at the time of sampling. No deviations from these procedures occurred. Sample preservation, handling and holding times are additional measures of accuracy of the data.

Table 2, page 3 addresses the data accuracy evaluation and its impact on data usability.

5.2.1 Blank Contamination

Tables 4-1 and 4-2 summarize the contaminants detected in trip blanks and field rinsate blanks (field blanks). Field blanks are used to evaluate the presence of contaminants on sampling equipment following decontamination and the potential for cross contamination during sample collection. Trip blanks are used to detect cross-contamination of VOCs during shipment. Laboratory method blanks are analyzed to indicate possible contamination introduced by sample handling, preparation, and/or analysis at the laboratory. Trip blanks and laboratory method blanks were identified during this sampling event. Table 2 addresses the impact of blank detections on data usability.

5.3 Representativeness and Comparability

Representativeness and comparability are achieved by using EPA approved sampling procedures and analytical methodologies. By following approved Final QAPP procedures for sample collection, sampling events should yield results representative of environmental conditions at the time of sampling. Similarly, reasonable comparability of analytical results for this and future sampling events can be achieved if the approved EPA analytical methods and standardized reporting units are employed.

5.3.1 Representativeness

Representativeness is a qualitative term that expresses the degree to which the sample data accurately and precisely represent the environmental conditions corresponding to the location and depth interval of sample collection. The sampling scheme, requirements and procedures for sampling were designed to maximize sample representativeness. Representativeness also can be monitored by reviewing field documentation and by performing field audits. Appropriate laboratory QA/QC requirements were described in the Final QAPP and laboratory statements of works (SOWs) to ensure that the laboratory analytical results were representative of true field conditions.

Table 2, page 4 addresses data representativeness and its impact on data usability.

5.3.2 Comparability

Comparability is a qualitative term that expresses the confidence with which a data set can be compared with another. Strict adherence to standard sample collection procedures, analytical detection limits, and analytical methods assures that data from like samples and sample conditions are comparable. This comparability is independent of laboratory personnel, data reviewers, or sampling personnel.

Comparability criteria are met for the project if, based on data review, the sample collection and analytical procedures are determined to have been followed or that variations in procedures did not affect the values reported.

To ensure comparability of data generated for the site, standard sample collection procedures and EPA-approved analytical methods were utilized by CDM Smith. The sample analyses were performed by EPA laboratories using defined, standard methods. Utilizing such procedures and methods enables the current data to be comparable with the previous data sets generated with similar methods. All aqueous samples were reported in microgram per liter ($\mu\text{g/L}$) or milligram/liter (mg/L).

As indicated on Table 2, page 5 the data is believed to be comparable.

5.5 Data Completeness

Completeness of the field program is defined as the percentage of samples planned for collection as listed in the Final QAPP versus the actual samples collected during the field program (see equation A).

Completeness for acceptable data is defined as the percentage of acceptable data obtained judged to be valid versus the total quantity of data generated (See equation B). Acceptable data includes both data that passes all the QC criteria (unqualified data) and data that may not pass all the QC criteria but had appropriate corrective actions taken (qualified but usable data). Only environmental samples and field duplicates are used to calculate completeness of the analytical results. QC data from field blanks, trip blanks and MS/MSDs are not used.

The calculations to determine completeness are:

$$A. \quad \% \text{ Completeness} = C \times \frac{100}{n}$$

where:

C= actual number of samples collected
n = total number of samples planned

$$B. \quad \% \text{ Completeness} = V \times \frac{100}{n'}$$

where:

V= number of measurements judged valid
n' = total number of measurements made

Table 5 shows that completeness goals (90 percent) were exceeded so the data is usable for its intended purpose. Additional details are provided on Table 2.

6.0 Summary Assessment of Data Usability and Reconciliation with QAPP Goals

Sample results evaluated in this assessment will be used for the objectives stated in Section 2.0 of this report.

Data quality objective (DQO) goals for completeness, comparability, and representativeness established during project planning were mainly achieved. Data failing QC criteria were appropriately qualified as estimated or non-detect during data validation. All data reported herein are usable as reported with the data validation qualifiers added except for rejected data.

The metals data (aluminum) were rejected mainly due to ICP serial dilution; the VOCs in one sample were rejected for internal standard exceedance. The rejections are detailed in Table 2, page 3 of the Data Usability Worksheet. The data are suitable for their intended use as stated in the previous section; the percentage of valid data for the groundwater is 99.82 percent. The rejected data should not be used for project decisions. The ninety percent completeness goal for usable data has been met.

7.0 Data Validation Qualifiers

The following qualifiers were used with the reported data.

Qualifiers:

- J - Estimated data due to exceeded quality control criteria.
- R - Data is rejected due to exceeded quality control criteria.
- U - Compound was analyzed for but not detected. The associated numerical value is the sample quantitation.
- UJ - Estimated non-detect data due to exceeded quality control criteria.

8.0 Acronyms

ABS	absolute difference
CDM Smith	CDM Federal Programs Corporation
CLP	Contract Laboratory Program
CRQL	contract required quantitation limit
D	duplicate
DQI	data quality indicator
DQO	data quality objective
EPA	(United States) Environmental Protection Agency
FCR	field change request
kg	kilogram
ICP	inductively coupled plasma
ID	identification
L	liter
LCS	laboratory control sample
mg	milligram
µg	microgram
ml	milliliter
MRL	method reporting limit
MS	matrix spike
MS/D	matrix spike/laboratory duplicate
MSD	matrix spike duplicate
PCB	polychlorinated biphenyls
QA/QC	quality assurance/quality control
QAPP	quality assurance project plan
RA	Remedial Action
RL	reporting limit
RPD	relative percent difference
RSD	relative standard deviation
SOP	standard operating procedure
SOW	statement of work
TAL	target analyte list
TCL	target compound list
TDS	total dissolved solids
TSS	total suspended solids
VOC	volatile organic compound
%R	percent recovery
%D	percent difference

9.0 References

CDM Federal Programs Corporation (CDM). 2010. Final Quality Assurance Project Plan. Old Roosevelt Field Contaminated Groundwater Area Site Remedial Action. Garden City, New Jersey. May 24.

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Table 1

Summary of Groundwater Samples

Table 1
Sample List Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Location	Sample Name	Sample ID	Sample Date	Matrix	Sample Type	Hardness	Metals	Mercury	Ammonia	TKN	VOC	TDS
8068	B9MC3	8068/RAB	9/19/2011	WG	N						51	
GWP-10	B9MC1	GWP-10/RAB	9/15/2011	WG	N						51	
GWP-11	B9MC0	GWP-11/RAB	9/15/2011	WG	N						51	
GWX-10019	B9M98	GWX-10019/RAB	9/12/2011	WG	N						51	
GWX-10020	B9M97	GWX-10020/RAB	9/12/2011	WG	N						51	
MW-12S	MB9MD1	MW-12S/RAB	9/20/2011	WG	N		22	1			51	
MW-12S	MB9MD2	MW-12SF/RAB	9/20/2011	W	N		22	1				
MW-1I	B9MC5	MW-01I/RAB	9/20/2011	WG	N						51	
MW-1S	B9MC4	MW-01S/RAB	9/20/2011	WG	N						51	
MW-2I	B9MC7	MW-02I/RAB	9/16/2011	WG	N						51	
MW-2S	B9MC6	MW-02S/RAB	9/16/2011	WG	N						51	
MW-3I	B9MC9	MW-03I/RAB	9/20/2011	WG	N						51	
MW-3S	B9MC8	MW-03S/RAB	9/20/2011	WG	N						51	
MW-8D	B9MD0	MW-8D/RAB	9/20/2011	WG	N						51	
MW-8D	B9MD7	MW-108D/RAB	9/20/2011	WG	FD						51	
SVP/GWM-10-1	B9M22	SVP-10-1/RAB	9/13/2011	WG	N						51	
SVP/GWM-10-10	B9M31	SVP-10-10/RAB	9/13/2011	WG	N						51	
SVP/GWM-10-2	B9M23	SVP-10-2/RAB	9/13/2011	WG	N						51	
SVP/GWM-10-3	B9M24	SVP-10-3/RAB	9/13/2011	WG	N						51	
SVP/GWM-10-4	B9M25	SVP-10-4/RAB	9/13/2011	WG	N						51	
SVP/GWM-10-5	B9M26	SVP-10-5/RAB	9/13/2011	WG	N						51	
SVP/GWM-10-6	B9M27	SVP-10-6/RAB	9/13/2011	WG	N						51	
SVP/GWM-10-6	B9N02	SVP-110-6/RAB	9/13/2011	WG	FD						51	
SVP/GWM-10-7	B9M28	SVP-10-7/RAB	9/13/2011	WG	N						51	
SVP/GWM-10-8	B9M29	SVP-10-8/RAB	9/13/2011	WG	N						51	
SVP/GWM-10-9	B9M30	SVP-10-9/RAB	9/13/2011	WG	N						51	
SVP/GWM-1-1	B9M46	SVP-1-1/RAB	9/15/2011	WG	N						51	
SVP/GWM-1-10	B9M55	SVP-1-10/RAB	9/15/2011	WG	N						51	
SVP/GWM-11-1	B9M32	SVP-11-1/RAB	9/14/2011	WG	N						51	
SVP/GWM-11-10	MB9M44	SVP-11-10/RAB	9/14/2011	WG	N		22	1			51	
SVP/GWM-11-10	MB9M45	SVP-11-10F/RAB	9/14/2011	W	N		22	1				
SVP/GWM-11-2	MB9M33	SVP-11-2/RAB	9/14/2011	WG	N		22	1			51	
SVP/GWM-11-2	MB9M34	SVP-11-2F/RAB	9/14/2011	W	N		22	1				
SVP/GWM-11-3	B9M35	SVP-11-3/RAB	9/14/2011	WG	N						51	
SVP/GWM-11-4	MB9M36	SVP-11-4/RAB	9/14/2011	WG	N		22	1			51	

Table 1
Sample List Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Location	Sample Name	Sample ID	Sample Date	Matrix	Sample Type	Hardness	Metals	Mercury	Ammonia	TKN	VOC	TDS
SVP/GWM-11-4	MB9M37	SVP-11-4F/RAB	9/14/2011	WG	N		22	1				
SVP/GWM-11-5	B9M38	SVP-11-5/RAB	9/14/2011	WG	N						51	
SVP/GWM-11-6	B9M39	SVP-11-6/RAB	9/14/2011	WG	N						51	
SVP/GWM-11-7	MB9M40	SVP-11-7/RAB	9/14/2011	WG	N		22	1			51	
SVP/GWM-11-7	MB9M41	SVP-11-7F/RAB	9/14/2011	W	N		22	1				
SVP/GWM-11-8	B9M42	SVP-11-8/RAB	9/14/2011	WG	N						51	
SVP/GWM-11-9	B9M43	SVP-11-9/RAB	9/14/2011	WG	N						51	
SVP/GWM-11-9	B9MA2	SVP-111-9/RAB	9/14/2011	WG	FD						51	
SVP/GWM-1-2	B9M47	SVP-1-2/RAB	9/15/2011	WG	N						51	
SVP/GWM-12-1	B9M74	SVP-12-1/RAB	9/15/2011	WG	N						51	
SVP/GWM-12-2	B9M75	SVP-12-2/RAB	9/15/2011	WG	N						51	
SVP/GWM-12-3	B9M76	SVP-12-3/RAB	9/15/2011	WG	N						51	
SVP/GWM-12-4	B9M77	SVP-12-4/RAB	9/15/2011	WG	N						51	
SVP/GWM-12-5	B9M78	SVP-12-5/RAB	9/15/2011	WG	N						51	
SVP/GWM-12-6	B9M79	SVP-12-6/RAB	9/15/2011	WG	N						51	
SVP/GWM-1-3	B9M48	SVP-1-3/RAB	9/15/2011	WG	N						51	
SVP/GWM-13-1	B9M80	SVP-13-1/RAB	9/15/2011	WG	N						51	
SVP/GWM-13-2	B9M81	SVP-13-2/RAB	9/15/2011	WG	N						51	
SVP/GWM-13-3	B9M82	SVP-13-3/RAB	9/15/2011	WG	N						51	
SVP/GWM-13-4	B9M83	SVP-13-4/RAB	9/15/2011	WG	N						51	
SVP/GWM-13-5	B9M84	SVP-13-5/RAB	9/15/2011	WG	N						51	
SVP/GWM-13-5	B9MC2	SVP-113-5/RAB	9/15/2011	WG	FD						51	
SVP/GWM-13-6	B9M85	SVP-13-6/RAB	9/15/2011	WG	N						51	
SVP/GWM-1-4	B9M49	SVP-1-4/RAB	9/15/2011	WG	N						51	
SVP/GWM-14-1	MB9M86	SVP-14-1/RAB	9/19/2011	WG	N		22	1			51	
SVP/GWM-14-10	MB9M96	SVP-114-10F/RAB	9/19/2011	W	FD		22	1				
SVP/GWM-14-10	MB9MB5	SVP-14-10/RAB	9/19/2011	WG	N	1	22	1	1	1	51	2
SVP/GWM-14-10	MB9MB6	SVP-14-10F/RAB	9/19/2011	W	N		22	1				
SVP/GWM-14-10	MB9MD6	SVP-114-10/RAB	9/19/2011	WG	FD	1	22	1	1	1	51	1
SVP/GWM-14-2	MB9MA4	SVP-14-2/RAB	9/19/2011	WG	N	1	22	1	1	1	51	1
SVP/GWM-14-2	MB9MA5	SVP-14-2F/RAB	9/19/2011	W	N		22	1				
SVP/GWM-14-3	MB9MA6	SVP-14-3/RAB	9/19/2011	WG	N		22	1			51	
SVP/GWM-14-4	MB9MA7	SVP-14-4/RAB	9/19/2011	WG	N	1	22	1	1	1	51	1
SVP/GWM-14-4	MB9MA8	SVP-14-4F/RAB	9/19/2011	W	N		22	1				
SVP/GWM-14-5	MB9MA9	SVP-14-5/RAB	9/19/2011	WG	N		22	1			51	

Table 1
Sample List Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Location	Sample Name	Sample ID	Sample Date	Matrix	Sample Type	Hardness	Metals	Mercury	Ammonia	TKN	VOC	TDS
SVP/GWM-14-6	MB9MB0	SVP-14-6/RAB	9/19/2011	WG	N		22	1			51	
SVP/GWM-14-7	MB9MB1	SVP-14-7/RAB	9/19/2011	WG	N	1	22	1	1	1	51	1
SVP/GWM-14-7	MB9MB2	SVP-14-7F/RAB	9/19/2011	W	N		22	1				
SVP/GWM-14-8	MB9MB3	SVP-14-8/RAB	9/19/2011	WG	N		22	1			51	
SVP/GWM-14-9	MB9MB4	SVP-14-9/RAB	9/19/2011	WG	N		22	1			51	
SVP/GWM-1-5	B9M50	SVP-1-5/RAB	9/15/2011	WG	N						51	
SVP/GWM-1-6	B9M51	SVP-1-6/RAB	9/15/2011	WG	N						51	
SVP/GWM-1-7	B9M52	SVP-1-7/RAB	9/15/2011	WG	N						51	
SVP/GWM-1-8	B9M53	SVP-1-8/RAB	9/15/2011	WG	N						51	
SVP/GWM-1-9	B9M54	SVP-1-9/RAB	9/15/2011	WG	N						51	
SVP/GWM-2-1	B9LX5	SVP-2-1/RAB	9/13/2011	WG	N						51	
SVP/GWM-2-10	B9LY4	SVP-2-10/RAB	9/13/2011	WG	N						51	
SVP/GWM-2-2	B9LX6	SVP-2-2/RAB	9/13/2011	WG	N						51	
SVP/GWM-2-3	B9LX7	SVP-2-3/RAB	9/13/2011	WG	N						51	
SVP/GWM-2-4	B9LX8	SVP-2-4/RAB	9/13/2011	WG	N						51	
SVP/GWM-2-5	B9LX9	SVP-2-5/RAB	9/13/2011	WG	N						51	
SVP/GWM-2-6	B9LY0DL	SVP-2-6/RAB	9/13/2011	WG	N						51	
SVP/GWM-2-7	B9LY1	SVP-2-7/RAB	9/13/2011	WG	N						51	
SVP/GWM-2-8	B9LY2	SVP-2-8/RAB	9/13/2011	WG	N						51	
SVP/GWM-2-9	B9LY3	SVP-2-9/RAB	9/13/2011	WG	N						51	
SVP/GWM-3-1	B9LY5	SVP-3-1/RAB	9/14/2011	WG	N						51	
SVP/GWM-3-2	B9M00	SVP-3-2/RAB	9/14/2011	WG	N						51	
SVP/GWM-3-3	B9LY6	SVP-3-3/RAB	9/14/2011	WG	N						51	
SVP/GWM-3-4	B9M01	SVP-3-4/RAB	9/14/2011	WG	N						51	
SVP/GWM-3-5	B9LY7	SVP-3-5/RAB	9/14/2011	WG	N						51	
SVP/GWM-3-6	B9LY8	SVP-3-6/RAB	9/14/2011	WG	N						51	
SVP/GWM-3-7	B9LY9	SVP-3-7/RAB	9/14/2011	WG	N						51	
SVP/GWM-4-1	B9LZ0	SVP-4-1/RAB	9/13/2011	WG	N						51	
SVP/GWM-4-10	B9LZ9	SVP-4-10/RAB	9/13/2011	WG	N						51	
SVP/GWM-4-2	B9LZ1	SVP-4-2/RAB	9/13/2011	WG	N						51	
SVP/GWM-4-3	B9LZ2	SVP-4-3/RAB	9/13/2011	WG	N						51	
SVP/GWM-4-4	B9LZ3	SVP-4-4/RAB	9/13/2011	WG	N						51	
SVP/GWM-4-5	B9LZ4	SVP-4-5/RAB	9/13/2011	WG	N						51	
SVP/GWM-4-6	B9LZ5	SVP-4-6/RAB	9/13/2011	WG	N						51	
SVP/GWM-4-7	B9LZ6	SVP-4-7/RAB	9/13/2011	WG	N						51	

Table 1
Sample List Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Location	Sample Name	Sample ID	Sample Date	Matrix	Sample Type	Hardness	Metals	Mercury	Ammonia	TKN	VOC	TDS
SVP/GWM-4-8	B9LZ7	SVP-4-8/RAB	9/13/2011	WG	N						51	
SVP/GWM-4-9	B9LZ8	SVP-4-9/RAB	9/13/2011	WG	N						51	
SVP/GWM-5-1	B9M02	SVP-5-1/RAB	9/14/2011	WG	N						51	
SVP/GWM-5-1	B9MA0	SVP-105-1/RAB	9/14/2011	WG	FD						51	
SVP/GWM-5-10	B9M11	SVP-5-10/RAB	9/14/2011	WG	N						51	
SVP/GWM-5-2	B9M03	SVP-5-2/RAB	9/14/2011	WG	N						51	
SVP/GWM-5-3	B9M04	SVP-5-3/RAB	9/14/2011	WG	N						51	
SVP/GWM-5-4	B9M05	SVP-5-4/RAB	9/14/2011	WG	N						51	
SVP/GWM-5-5	B9M06	SVP-5-5/RAB	9/14/2011	WG	N						51	
SVP/GWM-5-6	B9M07	SVP-5-6/RAB	9/14/2011	WG	N						51	
SVP/GWM-5-7	B9M08	SVP-5-7/RAB	9/14/2011	WG	N						51	
SVP/GWM-5-8	B9M09	SVP-5-8/RAB	9/14/2011	WG	N						51	
SVP/GWM-5-9	B9M10	SVP-5-9/RAB	9/14/2011	WG	N						51	
SVP/GWM-6-1	B9M56	SVP-6-1/RAB	9/14/2011	WG	N						51	
SVP/GWM-6-2	B9M57	SVP-6-2/RAB	9/14/2011	WG	N						51	
SVP/GWM-6-3	B9M58	SVP-6-3/RAB	9/14/2011	WG	N						51	
SVP/GWM-6-4	B9M59	SVP-6-4/RAB	9/14/2011	WG	N						51	
SVP/GWM-6-5	B9M60	SVP-6-5/RAB	9/14/2011	WG	N						51	
SVP/GWM-6-6	B9M61	SVP-6-6/RAB	9/14/2011	WG	N						51	
SVP/GWM-7-1	B9M62	SVP-7-1/RAB	9/14/2011	WG	N						51	
SVP/GWM-7-2	B9M63	SVP-7-2/RAB	9/14/2011	WG	N						51	
SVP/GWM-7-3	B9M64	SVP-7-3/RAB	9/14/2011	WG	N						51	
SVP/GWM-7-4	B9M65	SVP-7-4/RAB	9/14/2011	WG	N						51	
SVP/GWM-7-5	B9M66	SVP-7-5/RAB	9/14/2011	WG	N						51	
SVP/GWM-7-6	B9M67	SVP-7-6/RAB	9/14/2011	WG	N						51	
SVP/GWM-8-1	B9M68	SVP-8-1/RAB	9/15/2011	WG	N						51	
SVP/GWM-8-2	B9M69	SVP-8-2/RAB	9/15/2011	WG	N						51	
SVP/GWM-8-3	B9M70	SVP-8-3/RAB	9/15/2011	WG	N						51	
SVP/GWM-8-4	B9M71	SVP-8-4/RAB	9/15/2011	WG	N						51	
SVP/GWM-8-5	B9M72	SVP-8-5/RAB	9/15/2011	WG	N						51	
SVP/GWM-8-6	B9M73	SVP-8-6/RAB	9/15/2011	WG	N						51	
SVP/GWM-9-1	B9M12	SVP-9-1/RAB	9/13/2011	WG	N						51	
SVP/GWM-9-10	B9M21	SVP-9-10/RAB	9/13/2011	WG	N						51	
SVP/GWM-9-2	B9M13	SVP-9-2/RAB	9/13/2011	WG	N						51	
SVP/GWM-9-3	B9M14	SVP-9-3/RAB	9/13/2011	WG	N						51	

Table 1
Sample List Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Location	Sample Name	Sample ID	Sample Date	Matrix	Sample Type	Hardness	Metals	Mercury	Ammonia	TKN	VOC	TDS
SVP/GWM-9-4	B9M15	SVP-9-4/RAB	9/13/2011	WG	N						51	
SVP/GWM-9-5	B9M16	SVP-9-5/RAB	9/13/2011	WG	N						51	
SVP/GWM-9-6	B9M17	SVP-9-6/RAB	9/13/2011	WG	N						51	
SVP/GWM-9-7	B9M18	SVP-9-7/RAB	9/13/2011	WG	N						51	
SVP/GWM-9-7	B9N01	SVP-109-7/RAB	9/13/2011	WG	FD						51	
SVP/GWM-9-8	B9M19	SVP-9-8/RAB	9/13/2011	WG	N						51	
SVP/GWM-9-9	B9M20	SVP-9-9/RAB	9/13/2011	WG	N						51	

Notes:

1. The number of samples are estimated because the same number of compounds are not reported for some parameters.
2. Numbers in the grid represent the number of compounds reported in each analytical group.

Abbreviations:

FD	= field duplicate
ID	= identificaiton
N	= normal
WG	= groundwater
W	= water

Parameter	Code	Method
Ammonia	NH3	E350.1
Hardness	Hardness	E130.1
Mercury	Hg	ILM01.3
Metals	Met-MS	ILM01.3
Total dissolved solids	TDS	SM2540D
Total Kjeldahl Nitrogen	TKN	E351.2
Volatile organic compound	VOC	SOM01.2

Table 2

Data Usability Worksheet

Table 2
DATA USABILITY WORKSHEET
Site: Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Medium: Groundwater

Activity	Comment
Field Sampling	
Discuss sampling problems and field conditions that affect data usability.	<p>CDM Smith implemented two field change requests (FCRs) for the groundwater sampling field program outlined in the Final Remedial Action (RA) Quality Assurance Project Plan (QAPP):</p> <ul style="list-style-type: none"> ■ FCR-1 dated August 15, 2010 includes two changes: (1). Changing the groundwater sampling method during extraction well development; and (2). Adding monitoring wells to be used during aquifer testing. ■ FCR-2 dated August 26, 2010 includes three changes: (1) addition of the collection of a groundwater sample from the sampling port at the common header (which combines flows from all three extraction wells) during the yield test, (2) changes to the list of groundwater parameters to be analyzed during the yield test, and (3) changes to the collection of matrix spike/matrix spike duplicate samples (MS/MSD). <p>For FCR-1, (1) The Final RA QAPP specified that groundwater sample will be collected from three extraction wells, EW-1S, EW-1I, and EW-1D, after well development but prior to aquifer testing using the low flow method and a submersible pump. Each groundwater extraction well has 60 feet of screen at significant depths; the low flow method is not suitable for this situation. (2) The Final RA QAPP only includes SVP-04, SVP-05, and SVP-10 for monitoring the aquifer response during the aquifer testing with Westbay multi-level data logger. However, the groundwater modeler recommended adding other multiport monitoring wells during the aquifer testing for better characterizing of the aquifer.</p> <p>For FCR-2, (1) The Final RA QAPP specified collection of groundwater samples from the sample port of each extraction well. Even though the groundwater quality parameters can be calculated from the groundwater parameter and flow rates from each well, it would be more straightforward to use the results from a sample collected from the combined flow. Therefore, during the yield test, two groundwater samples will be collected from the common header, one between the second and the eight hours of the yield test; one at the end of the yield test. (2) The purpose of analyzing volatile organic compounds (VOCs), total and dissolved iron and manganese were to estimate the influent groundwater quality for treatment. Additional wet chemistry parameters, such as nitrate/nitrite, total suspended solids (TSS), total dissolved solids (TDS), alkalinity, hardness etc. were for information only. Therefore, those wet chemistry parameters were only analyzed for the samples from the combined header. (3) Communication with Division of Environmental Science and Assessment (DESA) laboratory indicated that MS/MSD for filtered target analyte list (TAL) metals was not necessary but that an MS/MSD should be included for the nitrate/nitrite analysis.</p>

Table 2
DATA USABILITY WORKSHEET
Site: Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Medium: Groundwater

Activity	Comment
Field Sampling (Continued)	
Are samples representative of receptor exposure for this medium (e.g. sample depth, grab versus composite, filtered versus unfiltered, low flow, etc.)?	<p>Sample representativeness was achieved by CDM Smith through the use of EPA and standard EPA approved analytical methods, decontaminated sampling equipment, use of inert materials to collect samples, clean sample gloves, and standard sampling procedures for EPA Region 2. Samples were kept at 4 degrees Celsius and received intact at the laboratories with the exceptions noted in the data validation reports. The generally low concentrations of blank contaminants are an indication that sample results are representative of the site conditions.</p> <p>Adherence to the sampling design wherever feasible and collection of stable water quality measurements helped to ensure the groundwater samples were representative of the site.</p>
Assess the effect of field QC results on data usability.	<p>Trip Blanks – No action was required for the detections of 2-butanone, m,p-xylene, and toluene detected in at least one trip blank below or at their respective CRQLs (Table 4-1). Acetone (8.6 microgram per liter ($\mu\text{g}/\text{L}$) - 11 $\mu\text{g}/\text{L}$) was detected above its contract required quantitation limit (CRQL) in several trip blanks and were qualified “U” in the associated samples as required.</p> <p>Field/Rinsate Blanks – Groundwater field blanks had detections for acetone (11 $\mu\text{g}/\text{L}$ – 16 $\mu\text{g}/\text{L}$) and lead (11.7 $\mu\text{g}/\text{L}$) (Table 4-2). Samples that were detected at or above their CRQLs in one or more field blank were qualified “U” in the associated samples as required. No action was required for tetrachloroethene, toluene, aluminum, calcium, chromium, copper, iron, lead, manganese, sodium, and zinc detected below the CRQLs in any of the field blanks.</p> <p>Field/Rinsate Blanks – Several blanks have common contaminant concentrations reported less than 5 times the CRQL. This affected five VOC results, which were qualified as non-detect “U” by the data validator.</p> <p>Field duplicate samples are discussed in the precision section on page 4 below. With the exception of results that were very close the CRQLs, or where one result had a high dilution factor, the results were very similar. This indicates that the data is usable.</p>
Summarize the effect of field sampling issues on the data assessment, if applicable.	The field changes described previously helped to improve the achievement of and to refine the project goals.

Table 2
DATA USABILITY WORKSHEET
Site: Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Medium: Groundwater

Activity	Comment
Analytical Techniques	
Were the analytical methods appropriate for quantitative data assessment?	Yes. The analytical methods used for the groundwater samples were appropriate for the RA. A list of methods is included on Table 1, the Sampling Summary. In addition, the EPA Contract Laboratory Program methods, Statement of Work (SOW) SOM01.2 or ISM01.3, were applied to meet the QAPP objectives.
Were detection limits adequate?	<p>Detection limits were low enough to compare the data with applicable criteria listed in the QAPP. The compounds were identified in the Final QAPP as achieving project action limits (PALs). The PALs listed were derived from EPA and New Jersey criteria as detailed on QAPP worksheet #15.</p> <p>All detection limits were at or below the QAPP listed PALs, and the data are believed to be usable for the intended data uses. The data user is cautioned to re-evaluate the sample reporting limits against the final approved RI criteria, risk assessment criteria, and any other criteria established for use of the data.</p>
Summarize the effect of analytical technique issues on the data assessment, if applicable.	<p>There are no analytical technique issues that should affect data usability. Analytes analyzed at dilutions had elevated detection limits.</p> <p>Analytical Blank - Laboratory method blanks showed detections resulting in qualification of two VOCs and 79 metal sample results. Associated sample results were appropriately qualified as non-detect "U".</p> <p>Deuterated Monitoring Compounds – Deuterated monitoring compounds (DMCs) exceeded quality control (QC) criteria. This affected results for 22 VOCs which were estimated by the data validator. Sixty-three VOC samples were also estimated for DMC.</p> <p>Percent Relative Standard Deviation (%RSD) and Percent Difference (%D) - Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean relative response factor (RRF) from the initial calibration. %D is a measure of the instrument's daily performance. A value outside of these limits indicates potential detection and quantitation errors. Percent RSD and percent D affected recoveries that were outside control limits for 15 VOCs. These results were estimated by the data validator.</p> <p>Internal Standards (IS) - IS performance criteria ensure that the GC/MS sensitivity and response are stable during every analytical run. Fifteen (15) VOC, results had IS outside criteria and were estimated. Additionally, one VOC sample (SVP-111-9-RAB) was rejected for the following compounds 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,2-dibromo-3-chloropropane, 1,2-dichlorobenzene, 1,3-dichlorobenzene, 1,4-dichlorobenzene, and bromoform.</p> <p>ICP Serial Dilution (Inorganics) - Several ICP serial dilutions did not yield acceptable %D. Forty-eight (48) metal results were estimated. In addition, 8 metals samples (SVP-14-3/RAB, SVP-14-4/RAB, SVP-14-5/RAB, SVP-14-6/RAB, SVP-14-7/RAB, SVP-14-8/RAB, FB091911, and FB092011) were rejected for aluminum.</p>

Table 2
DATA USABILITY WORKSHEET
Site: Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Medium: Groundwater

Activity	Comment
Data Quality Objectives	
Precision - How were duplicates handled?	<p>Field duplicates were collected as co-located samples. A criterion of 50 percent relative percent difference (RPD) applied when both results were greater than two times the CRQL. For all other data the absolute difference (ABS) should be equal to or less than two times the CRQL.</p> <p>Round 1 – Target compound list (TCL) VOCs, TAL metals and mercury (Hg), and wet chemistry parameters</p> <p>The outliers below failed the applicable RPD or ABS criteria:</p> <ul style="list-style-type: none"> ■ TCL VOC - RPD result for one compound (trichlorofluoromethane) exceeded out of 36 calculable pairs ■ TAL Metals and Hg - RPD result for one metal (sodium) exceeded out of 20 calculable pairs <p>As shown on Tables 3-1 to 3-3, most groundwater field duplicate results met the Final QAPP project-specific precision criteria. These outlier results should be used with caution.</p> <p>Data Validation Action – Calcium, chromium, potassium, aluminum and sodium were above the validation criteria in one field duplicate sample pair (SVP-14-10/RAB and SVP-114-10/RAB). Aluminum result (SVP-14-10/RAB) was rejected and the other metal results were qualified estimated by the data validator.</p>
Accuracy - How were split samples handled?	Splits samples were not collected.
Representativeness - Indicate any problems associated with data representativeness (e.g., trip blank or rinsate blank contamination, chain of custody problems, etc.).	<p>Trip Blanks – No action was required for the detections of 2-butanone, m,p-xylene, and toluene detected in at least one trip blank below or at their respective CRQLs (Table 4-1). Acetone (8.6 µg/L - 11 µg/L) was detected above its CRQLs in several trip blanks and were qualified “U” in the associated samples as required.</p> <p>Field/Rinsate Blanks – Groundwater field blanks had detections for acetone (11 µg/L – 16 µg/L) and lead (7.6 - 11.7 µg/L) (Table 4-2). Samples detected at or above their CRQLs in one or more field blank were qualified “U” in the associated samples. Five VOC results for acetone, tetrachloroethene, and toluene were qualified as non-detect “U” by the data validator.</p> <p>No action was required for aluminum, calcium, chromium, copper, iron, lead, manganese, sodium, and zinc detected below the CRQLs in any of the field blanks.</p>

Table 2
DATA USABILITY WORKSHEET
Site: Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Medium: Groundwater

Activity	Comment
Data Quality Objectives (continued)	
Completeness - Indicate any problems associated with data completeness (e.g., incorrect sample analysis, incomplete sample records, problems with field procedures, etc.).	<p>Completeness of the data set achieved by CDM Smith is presented in Table 5. It is important to note that the values reported as estimated, "J" qualified data, include only those data that are considered estimated detected results, not estimated non-detect results, "UJ" data. The list of samples collected and parameters analyzed are shown on Table 1 of this assessment. For data collected and judged to be valid had a completeness value of more than 99 percent.</p> <p>The overall goal was to generate a complete data set for at least 90 percent of the samples planned for collection and 90 percent valid data from the samples analyzed. Therefore, CDM Smith achieved data completeness and usability established in the Final QAPP.</p> <p>The data validation narratives indicate that the sample analyses generally met the QC criteria cited in the methods with the exceptions noted in the data narratives. Results associated with QC outliers were appropriately qualified as estimated or as non-detect by data validators. Approximately 6 percent of the groundwater analyses were estimated. These estimated data are usable for the intended project purposes.</p> <p>Approximately less than one percent of groundwater analyses were rejected. Seven VOC results were rejected due to internal standards. Seven metal samples were rejected due to serial dilution and field duplicate criteria. This rejected data is not usable for the project objectives.</p> <p>One hundred (100) percent of the planned TCL/TAL parameter samples were collected. The data set is complete based on planned samples and approved changes to the field program.</p>
Comparability - Indicate any problems associated with data comparability.	No problems were associated with data comparability.
Were the DQOs specified in the QAPP satisfied?	Yes, the data quality objectives (DQOs) identified in the QAPP were satisfied.
Summarize the effect of DQO issues on the data assessment, if applicable.	There are no DQO issues that should affect data usability.

Table 2
DATA USABILITY WORKSHEET
Site: Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Medium: Groundwater

Activity	Comment
Data Validation and Interpretation	
What are the data validation requirements?	Figure A in the report shows the data quality indicators (DQIs) and Corresponding QC Parameters and the specific topics covered by the data validation review.
What method or guidance was used to validate the data?	The data validation criteria in the QAPP were applied: SOP HW-33, rev 0, SOP HW-34, rev 0, HW-2, rev 13, and CDM 029A SOP
Was the data validation method consistent with guidance? Discuss any discrepancies.	Yes. The data validation method was consistent with regional guidance.
Were all data qualifiers defined? Discuss those which were not.	Yes. All data qualifiers were defined.
Which qualifiers represent useable data?	J, U, and UJ
Which qualifiers represent unusable data?	R
How are tentatively identified compounds handled?	None.
Summarize the effect of data validation and interpretation issues on the risk assessment, if applicable.	Unusable data qualified with an "R" will not be used. All other data, both qualified and unqualified will be used.
Additional notes:	None.

Note: The purpose of this Worksheet is to succinctly summarize the data usability analysis and conclusions.

Table 3
Field Duplicate Groundwater Results

Table 3-1: VOC Field Duplicate Results

Table 3-2: Metals Field Duplicate Results

Table 3-3: Wet Chemistry Field Duplicate Results

Table 3-1
VOC Duplicate Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Chemical	CRQL	Unit	MW-8D/RAB	MW-108D/RAB	RPD	ABS	SVP-5-1/RAB	SVP-105-1/RAB	RPD	ABS
			MW-8D	MW-8D			SVP/GWM-5-1	SVP/GWM-5-1		
			9/20/2011	9/20/2011			9/14/2011	9/14/2011		
Ethylbenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Styrene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Cis-1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Trans-1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 UJ	0.5 U	NC	NA
1,2-Dibromoethane (EDB)	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2-Dichloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
4-Methyl-2-Pentanone (MIBK)	5	µg/L	5 U	5 U	NC	NA	5 U	5 U	NC	NA
Methylcyclohexane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Toluene	0.5	µg/L	37	37	0.00	NA	0.5 U	0.5 U	NC	NA
Chlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Cyclohexane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2,4-Trichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 UJ	0.5 U	NC	NA
Dibromochloromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Tetrachloroethene	0.5	µg/L	0.5 U	0.19 J	NC	0.31	0.21 J	0.22 J	NC	0.01
Cis-1,2-Dichloroethene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.4 J	0.5 U	NC	0.1
Trans-1,2-Dichloroethene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Methyl Tert-Butyl Ether (MTBE)	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
m,p-Xylene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,3-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 UJ	0.5 U	NC	NA
Carbon Tetrachloride	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.25 J	0.25 J	NC	0
2-Hexanone	5	µg/L	5 U	5 U	NC	NA	5 U	5 U	NC	NA
Acetone	5	µg/L	5.1	6.2	19.47	NA	5 U	5 U	NC	NA
Chloroform	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.27 J	0.5 U	NC	0.23
Benzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,1,1-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Bromomethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Chloromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Bromochloromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Chloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Vinyl Chloride	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Methylene Chloride	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA

Table 3-1
VOC Duplicate Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Chemical	CRQL	Unit	MW-8D/RAB	MW-108D/RAB	RPD	ABS	SVP-5-1/RAB	SVP-105-1/RAB	RPD	ABS
			MW-8D	MW-8D			SVP/GWM-5-1	SVP/GWM-5-1		
			9/20/2011	9/20/2011			9/14/2011	9/14/2011		
Carbon Disulfide	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Bromoform	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 UJ	0.5 U	NC	NA
Bromodichloromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,1-Dichloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.7	0.7	NC	0
1,1-Dichloroethene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Trichlorofluoromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	60	35	52.63	NA
Dichlorodifluoromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.26 J	0.27 J	NC	0.01
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	1.1	1.2	8.70	NA
1,2-Dichloropropane	0.5	µg/L	0.5 U	0.2 J	NC	0.3	0.5 U	0.5 U	NC	NA
2-Butanone (MEK)	5	µg/L	5 U	5 U	NC	NA	5 U	5 U	NC	NA
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Trichloroethene	0.5	µg/L	0.97	1.2	NC	0.23	6.1	6.2	1.63	NA
Methyl Acetate	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2,3-Trichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 UJ	0.5 U	NC	NA
o-Xylene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 UJ	0.5 U	NC	NA
1,2-Dibromo-3-Chloropropane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 UJ	0.5 U	NC	NA
Isopropylbenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA

Notes:

Sample pairs with RPD or ABS outside of criteria are

highlighted in red

ABS = absolute difference

CRQL = contract required quantitation limit

NA = not applicable

NC = not calculable

RPD = relative percent difference

µg/L = microgram per liter

Data Validation Qualifiers

J Estimated data due to exceeded quality control criteria.

R Data is rejected due to exceeded quality control criteria.

U Compound was analyzed but not detected. The associated numerical value is the sample quantitation limit.

UJ Not detected, quantitation limit may be inaccurate or imprecise.

Table 3-1
VOC Duplicate Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Chemical	CRQL	Unit	SVP-9-7/RAB	SVP-109-7/RAB	RPD	ABS	SVP-10-6/RAB	SVP-110-6/RAB	RPD	ABS
			SVP/GWM-9-7	SVP/GWM-9-7			SVP/GWM-10-6	SVP/GWM-10-6		
			9/13/2011	9/13/2011			9/13/2011	9/13/2011		
Ethylbenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Styrene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Cis-1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Trans-1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2-Dibromoethane (EDB)	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2-Dichloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
4-Methyl-2-Pentanone (MIBK)	5	µg/L	5 U	5 U	NC	NA	5 U	5 U	NC	NA
Methylcyclohexane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Toluene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Chlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Cyclohexane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2,4-Trichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Dibromochloromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Tetrachloroethene	0.5	µg/L	5.9	6.2	4.96	NA	0.5 U	0.5 U	NC	NA
Cis-1,2-Dichloroethene	0.5	µg/L	1.8	1.9	5.41	NA	0.95	1	NC	0.05
Trans-1,2-Dichloroethene	0.5	µg/L	0.5 U	0.11 J	NC	0.39	0.5 U	0.5 U	NC	NA
Methyl Tert-Butyl Ether (MTBE)	0.5	µg/L	0.19 J	0.25 J	27.27	NA	0.5 U	0.5 U	NC	NA
m,p-Xylene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,3-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Carbon Tetrachloride	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
2-Hexanone	5	µg/L	5 U	5 U	NC	NA	5 U	5 U	NC	NA
Acetone	5	µg/L	5 U	5 U	NC	NA	5 U	5 U	NC	NA
Chloroform	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Benzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,1,1-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Bromomethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Chloromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Bromochloromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Chloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Vinyl Chloride	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Methylene Chloride	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA

Table 3-1
VOC Duplicate Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Chemical	CRQL	Unit	SVP-9-7/RAB	SVP-109-7/RAB	RPD	ABS	SVP-10-6/RAB	SVP-110-6/RAB	RPD	ABS
			SVP/GWM-9-7	SVP/GWM-9-7			SVP/GWM-10-6	SVP/GWM-10-6		
			9/13/2011	9/13/2011			9/13/2011	9/13/2011		
Carbon Disulfide	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Bromoform	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Bromodichloromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,1-Dichloroethane	0.5	µg/L	0.5 U	0.1 J	NC	0.4	0.5 U	0.5 U	NC	NA
1,1-Dichloroethene	0.5	µg/L	0.59	0.5 U	NC	0.09	0.5 U	0.5 U	NC	NA
Trichlorofluoromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.15 J	0.12 J	NC	0.03
Dichlorodifluoromethane	0.5	µg/L	0.62	0.74	NC	0.12	0.5 U	0.5 U	NC	NA
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2-Dichloropropane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
2-Butanone (MEK)	5	µg/L	5 U	5 U	NC	NA	5 U	5 U	NC	NA
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Trichloroethene	0.5	µg/L	63	41	42.31	NA	4.1	4.7	13.64	NA
Methyl Acetate	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2,3-Trichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
o-Xylene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2-Dibromo-3-Chloropropane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Isopropylbenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA

Notes:

Sample pairs with RPD or ABS outside of criteria are

highlighted in red

ABS = absolute difference

CRQL = contract required quantitation limit

NA = not applicable

NC = not calculable

RPD = relative percent difference

µg/L = microgram per liter

Table 3-1
VOC Duplicate Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Chemical	CRQL	Unit	SVP-13-5/RAB	SVP-113-5/RAB	RPD	ABS	SVP-14-10/RAB	SVP-114-10/RAB	RPD	ABS
			SVP/GWM-13-5	SVP/GWM-13-5			SVP/GWM-14-10	SVP/GWM-14-10		
			9/15/2011	9/15/2011			9/19/2011	9/19/2011		
Ethylbenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Styrene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Cis-1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Trans-1,3-Dichloropropene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,4-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2-Dibromoethane (EDB)	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2-Dichloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
4-Methyl-2-Pentanone (MIBK)	5	µg/L	5 U	5 U	NC	NA	5 U	5 U	NC	NA
Methylcyclohexane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Toluene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Chlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Cyclohexane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2,4-Trichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Dibromochloromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Tetrachloroethene	0.5	µg/L	3.9	3.6	8.00	NA	0.25 J	0.26 J	3.92	NA
Cis-1,2-Dichloroethene	0.5	µg/L	1.3	1.1	16.67	NA	0.5 U	0.5 U	NC	NA
Trans-1,2-Dichloroethene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Methyl Tert-Butyl Ether (MTBE)	0.5	µg/L	0.48 J	0.43 J	NC	0.05	0.5 U	0.5 U	NC	NA
m,p-Xylene	0.5	µg/L	0.5 U	0.15 J	NC	0.35	0.5 U	0.5 U	NC	NA
1,3-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Carbon Tetrachloride	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
2-Hexanone	5	µg/L	5 U	5 U	NC	NA	5 U	5 U	NC	NA
Acetone	5	µg/L	5 U	5 U	NC	NA	7.3	6.9	5.63	NA
Chloroform	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Benzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,1,1-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Bromomethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Chloromethane	0.5	µg/L	0.91	0.68	NC	0.23	0.5 U	0.5 U	NC	NA
Bromochloromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Chloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Vinyl Chloride	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Methylene Chloride	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA

Table 3-1
VOC Duplicate Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Chemical	CRQL	Unit	SVP-13-5/RAB	SVP-113-5/RAB	RPD	ABS	SVP-14-10/RAB	SVP-114-10/RAB	RPD	ABS
			SVP/GWM-13-5	SVP/GWM-13-5			SVP/GWM-14-10	SVP/GWM-14-10		
			9/15/2011	9/15/2011			9/19/2011	9/19/2011		
Carbon Disulfide	0.5	µg/L	0.29 J	0.34 J	NC	0.05	0.5 U	0.5 U	NC	NA
Bromoform	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Bromodichloromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,1-Dichloroethane	0.5	µg/L	0.11 J	0.5 U	NC	0.39	0.5 U	0.5 U	NC	NA
1,1-Dichloroethene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Trichlorofluoromethane	0.5	µg/L	0.49 J	0.44 J	NC	0.05	0.5 U	0.5 U	NC	NA
Dichlorodifluoromethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2-Dichloropropane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
2-Butanone (MEK)	5	µg/L	5 U	5 U	NC	NA	4 J	4.6 J	13.95	NA
1,1,2-Trichloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Trichloroethene	0.5	µg/L	19	16	17.14	NA	0.5 U	0.5 U	NC	NA
Methyl Acetate	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,1,2,2-Tetrachloroethane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2,3-Trichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
o-Xylene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2-Dichlorobenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
1,2-Dibromo-3-Chloropropane	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA
Isopropylbenzene	0.5	µg/L	0.5 U	0.5 U	NC	NA	0.5 U	0.5 U	NC	NA

Notes:

Sample pairs with RPD or ABS outside of criteria are

highlighted in red

ABS = absolute difference

CRQL = contract required quantitation limit

NA = not applicable

NC = not calculable

RPD = relative percent difference

µg/L = microgram per liter

Table 3-2
Metals Duplicate Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Chemical	CRQL	Unit	SVP-14-10/RAB	SVP-114-10/RAB	RPD	ABS	SVP-14-10F/RAB	SVP-114-10F/RAB	RPD	ABS
			SVP/GWM-14-10	SVP/GWM-14-10			SVP/GWM-14-10	SVP/GWM-14-10		
			9/19/2011	9/19/2011			9/19/2011	9/19/2011		
Aluminum	200	µg/L	795 R	1400 J	NC	NA	776 R	867 R	NC	NA
Iron	100	µg/L	100 U	56.6 J	NC	43.4	100 U	100 U	NC	NA
Lead	10	µg/L	10 U	1.8 J	NC	8.2	10 U	10 U	NC	NA
Magnesium	5000	µg/L	5000 U	5000 U	NC	NA	5000 U	5000 U	NC	NA
Manganese	15	µg/L	15 U	15 U	NC	NA	15 U	15 U	NC	NA
Mercury	0.2	µg/L	0.2 U	0.2 U	NC	NA	0.2 U	0.2 U	NC	NA
Nickel	40	µg/L	40 U	9.3 J	NC	30.7	40 U	40 U	NC	NA
Potassium	5000	µg/L	49900 J	36400 J	31.29	NA	51100	51100	0.00	NA
Silver	10	µg/L	10 U	10 U	NC	NA	10 U	10 U	NC	NA
Sodium	5000	µg/L	52300 J	131000 J	85.87	NA	56100 J	56500 J	0.71	NA
Thallium	25	µg/L	25 U	25 U	NC	NA	25 U	25 U	NC	NA
Antimony	60	µg/L	60 U	60 U	NC	NA	60 U	60 U	NC	NA
Arsenic	10	µg/L	10 U	7.3 J	NC	2.7	5.4 J	5.1 J	NC	0.3
Barium	200	µg/L	19.2 J	17.8 J	7.57	NA	20.8 J	21.4 J	2.84	NA
Beryllium	5	µg/L	5 U	5 U	NC	NA	5 U	5 U	NC	NA
Cadmium	5	µg/L	5 U	5 U	NC	NA	5 U	5 U	NC	NA
Chromium	10	µg/L	44 J	27 J	47.89	NA	57.1	60.2	5.29	NA
Cobalt	50	µg/L	50 U	50 U	NC	NA	50 U	50 U	NC	NA
Copper	25	µg/L	25 U	2.2 J	NC	22.8	3.4 J	4.8 J	NC	1.4
Vanadium	50	µg/L	24.3 J	44.7 J	NA	20.4	50 U	50 U	NC	NA
Zinc	60	µg/L	60 U	13.5 J	NC	46.5	60 U	60 U	NC	NA
Calcium	5000	µg/L	58500 J	39800 J	38.05	NA	51800	51800	0.00	NA
Selenium	35	µg/L	2.2 J	35 U	NC	32.8	35 U	35 U	NC	NA

Notes:

Sample pairs with RPD or ABS outside of criteria are highlighted in red

ABS = absolute difference

CRQL = contract required quantitation limit

NA = not applicable

NC = not calculable

RPD = relative percent difference

µg/L = microgram per liter

Data Validation Qualifiers

J Estimated data due to exceeded quality control criteria.

R Data is rejected due to exceeded quality control criteria.

U Compound was not detected; associated numerical value is the sample quantitation limit.

UJ Not detected, quantitation limit may be inaccurate or imprecise.

Table 3-3
Wet Chemistry Duplicate Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Chemical	QL	5*CRQL	RPD	Unit	SVP-14-10/RAB	SVP-114-10/RAB	RBS	ABS
					SVP/GWM-14-10	SVP/GWM-14-10		
					9/19/2011	9/19/2011		
Ammonia as N	0.2	0.40	50	mg/L	0.513	0.56	8.76	NA
Total Hardness	5	10	50	mg/L	135	136	0.74	NA
Total Dissolved Solids	10	20	50	mg/L	438	389	11.85	NA
Nitrogen, Total Kjeldahl	0.25	1	50	mg/L	0.698	0.681	NA	0.017

Notes:

Sample pairs with RPD or ABS outside of criteria are highlighted in red

ABS = absolute difference

CRQL = contract required quantitation limit

NA = not applicable

NC = not calculable

RPD = relative percent difference

mg/L = milligram per liter

Table 4

Blanks Results

Table 4-1: Trip Blank Results

Table 4-2: Field Blank Results

Table 4-1
Trip Blank Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Chemical Name	CRQL	Unit	TB091211		TB091311		TB091411		TB091411A		TB091511		TB091511A		TB091611		TB091911		TB092011	
			9/12/2011		9/13/2011		9/14/2011		9/14/2011		9/15/2011		9/15/2011		9/16/2011		9/19/2011		9/20/2011	
VOC																				
2-Butanone (MEK)	5	µg/L	5	U	5	U	2.4	J	5	U	3	J	2.6	J	2.2	J	5	U	2.5	J
Acetone	5	µg/L	11		10		11		5	U	11		8.6		9.5		10		11	
m,p-Xylene	0.5	µg/L	0.12	J	0.5	U	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	U	0.5	U	0.5	U
Toluene	0.5	µg/L	0.27	J	0.22	J	0.16	J	0.5	U	0.11	J	0.11	J	0.5	U	0.5	U	0.5	U

Notes:

1. Compounds for which there were no detects are not included in the table above.

2. Hits above the CRQL are highlighted and bolded.

3. Hits below the CRQL are highlighted and italicized.

CRQL = contact required quantitation limit

MEK = 2-Butanone

VOC = volatile organic compound

J = estimated result

U = Compound was analyzed but not detected. The associated numerical value is the sample quantitation limit.

µg/L = micrograms per liter

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

Table 4-2
Field Blank Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Chemical Name	CRQL	Unit	FB091211		FB091311		FB091411		FB091411F		FB091511		FB091611		FB091911		FB091911F		FB092011		
			9/12/2011		9/13/2011		9/14/2011		9/14/2011		9/15/2011		9/16/2011		9/19/2011		9/19/2011		9/20/2011		
VOC																					
Acetone	5	µg/L		11		13		16			5 U		15		5 U					12	
Tetrachloroethene	5	µg/L		0.5 U		0.5 U		0.5 U			0.5 U		0.5 U		0.36 J					0.5 U	
Toluene	5	µg/L		<i>0.24 J</i>		<i>0.15 J</i>		<i>0.12 J</i>			0.5 U		0.5 U		0.5 U					0.5 U	
Metals																					
Aluminum	200	µg/L					200	UJ	200	UJ					200	UJ	200	R	200	UJ	
Calcium	5000	µg/L					468	J	347	J					5000	U	5000	U	1140	J	
Chromium	10	µg/L					1.2	J	10	U					10	U	10	U	10	U	
Copper	25	µg/L					10.7	J	7.3	J					25	U	25	U	15.2	J	
Iron	100	µg/L					57.3	J	49.5	J					100	U	100	U	100	U	
Lead	10	µg/L					7.8	J	7.6	J					10	U	10	U	11.7		
Manganese	15	µg/L					1.6	J	2	J					15	U	15	U	15	U	
Sodium	5000	µg/L					857	J	810	J					976	J	663	J	1060	J	
Zinc	60	µg/L					42.8	J	29.4	J					60	U	60	U	41.6	J	

Notes:

1. Compounds for which there were no detects are not included in the table above.

2. Hits above the CRQL are highlighted and bolded.

3. Hits below the CRQL are highlighted and italicized.

CRQL = contact required quantitation limit

J = estimated results

U = Compound was analyzed but not detected. The associated numerical value is the sample quantitation limit.

µg/L = microgram per liter

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

Table 5
Groundwater Data Completeness Report

Table 5
Completeness Table
Old Roosevelt Field Contaminated Groundwater Area Superfund Site
Garden City, New York

Analytical Parameter	Non-Detects	No. of Hits	No. of Rejects	Estimated Hits	Total	Percent Rejected	Percent Estimated Hits
VOCs	6153	493	7	334	6987	0.10	4.78
Metals	341	77	7	147	572	1.22	25.70
Mercury	26	0	0	0	26	0.00	0.00
Total Kjeldahl Nitrogen	0	5	0	0	5	0.00	0.00
Hardness	0	5	0	0	5	0.00	0.00
Ammonia	0	5	0	0	5	0.00	0.00
Total Dissolved Solids	0	6	0	0	6	0.00	0.00
Sum	6520	591	14	481	7606	0.18	6.32
Total Completeness						99.82	

Percent of all Data Rejected	0.18
Percent of VOCs Rejected	0.10
Percent of Metals Rejected	1.22
Percent of all Hits Estimated	6.32
Percent Complete (judged valid)	99.82

(does not include estimated non-detect data)
 (Includes all estimated data)

Notes:

The counts and calculations above do not include field or trip blank samples only environmental samples.

VOC = volatile organic compound

Appendix H

Analytical Data

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order	Sample ID	1	2	3	4	5	6	7	8	9
Location ID	8068/RAB	GWP-10/RAB	GWP-11/RAB	GWX-10019/RAB	GWX-10020/RAB	MW-01I/RAB	MW-01S/RAB	MW-02I/RAB	MW-02S/RAB	
Location Name	8068	GWP-10	GWP-11	GWX-10019	GWX-10020	MW-1I	MW-1S	MW-2I	MW-2S	
Sample Date	9/19/2011	9/15/2011	9/15/2011	9/12/2011	9/12/2011	9/20/2011	9/20/2011	9/16/2011	9/16/2011	
Start Depth										
End Depth										
Depth Unit										
CAS No.	Chemical	Method	Unit	Value Q	Value Q	Value Q	Value Q	Value Q	Value Q	Value Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.22 J	0.14 J	0.5 U	0.5 UJ	0.5 U	0.29 J	1.2
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
108-88-3	Toluene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.55	0.42 J
108-90-7	Chlorobenzene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	E524.2	ug/l	350	54	130	5.3 J	0.3 J	16	2.3
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	6 J	3.1 J	9.8	6.7 J	0.5 U	22	5.7
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5 U	0.11 J	0.32 J	0.5 UJ	0.5 U	0.51	0.14 J
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	0.19 J	0.5 U	0.58	9.4 J	0.58	0.5 U	16
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.13 J	0.23 J
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.36 J	0.45 J	0.21 J	0.5 UJ	0.5 U	0.22 J	0.5 U
591-78-6	2-Hexanone	E524.2	ug/l	5 U	5 U	5 U	5 UJ	5 U	5 U	5 U
67-64-1	Acetone	E524.2	ug/l	5 U	5 U	5 U	5 UJ	5 U	3.5 J	5 U
67-66-3	Chloroform	E524.2	ug/l	3.2	1.4	0.5 U	0.5 UJ	0.5 U	0.4 J	0.5 U
71-43-2	Benzene	E524.2	ug/l	0.12 J	0.5 U	0.5 U	0.5 UJ	0.5 U	0.75	0.42 J
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	1.9	0.99	0.75	0.5 UJ	0.5 U	0.73	0.5 U
74-83-9	Bromomethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
74-97-5	Bromochloromethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
75-09-2	Methylene Chloride	E524.2	ug/l	12	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	E524.2	ug/l	0.89	2.5	1.2	0.5 UJ	0.5 U	0.78	0.11 J
75-35-4	1,1-Dichloroethene	E524.2	ug/l	10	3.4 J	2.5	0.5 UJ	0.5 U	4.7	0.5 U
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.83	12	5.2	0.83 J	0.5 U	0.28 J	0.35 J
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.5 U	14	8.8	0.77	0.5 U	5.5	0.92
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	3.1	0.27 J	0.2 J	0.5 UJ	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order	1	2	3	4	5	6	7	8	9
Sample ID	8068/RAB	GWP-10/RAB	GWP-11/RAB	GWX-10019/RAB	GWX-10020/RAB	MW-01I/RAB	MW-01S/RAB	MW-02I/RAB	MW-02S/RAB
Location ID	8068	GWP-10	GWP-11	GWX-10019	GWX-10020	MW-1I	MW-1S	MW-2I	MW-2S
Location Name									
Sample Date	9/19/2011	9/15/2011	9/15/2011	9/12/2011	9/12/2011	9/20/2011	9/20/2011	9/16/2011	9/16/2011
Start Depth									
End Depth									
Depth Unit									
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5 U		5 U		5 U	
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.14 J		0.2 J		0.5 U	
79-01-6	Trichloroethene	E524.2	ug/l	120		25		98	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5 U		0.5 U		0.5 UJ	
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U	
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 UJ	
95-47-6	O-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 UJ	
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 UJ	
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U	
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 UJ	

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		10	11	12	13	14	16	17	18	19	
Sample ID	MW-03I/RAB		MW-03S/RAB		MW-8D/RAB		SVP-1-1/RAB		SVP-1-2/RAB		
Location ID	MW-3I		MW-3S		MW-8D		SVP/GWM-1-1		SVP/GWM-1-2		
Location Name	MW-3I		MW-3S		MW-8D		MW-12S		MW-12S		
Sample Date	9/20/2011		9/20/2011		9/20/2011		9/15/2011		9/15/2011		
Start Depth											
End Depth											
Depth Unit											
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
100-42-5	Styrene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.3 J		0.5 U		0.5 U		0.5 U	
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5 U		5 U		5 U		5 U	
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
108-88-3	Toluene	E524.2	ug/l	0.35 J		0.21 J		37		0.5 U	
108-90-7	Chlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
110-82-7	Cyclohexane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
127-18-4	Tetrachloroethene	E524.2	ug/l	180		310		0.5 U		0.45 J	
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	12		1.6		0.5 U		0.26 J	
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.14 J		0.5 U		0.5 U		0.5 U	
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	1.2		0.31 J		0.5 U		0.16 J	
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		1.7	
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
591-78-6	2-Hexanone	E524.2	ug/l	5 U		5 U		5 U		5 U	
67-64-1	Acetone	E524.2	ug/l	5 U		5 U		5.1		6.2	
67-66-3	Chloroform	E524.2	ug/l	0.67		0.28 J		0.5 U		0.5 U	
71-43-2	Benzene	E524.2	ug/l	0.2 J		0.5 U		0.5 U		0.5 U	
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	2.9		0.38 J		0.5 U		0.5 U	
74-83-9	Bromomethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
74-87-3	Chloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
74-97-5	Bromo-chloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-00-3	Chloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-09-2	Methylene Chloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		12	
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-25-2	Bromoform	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-34-3	1,1-Dichloroethane	E524.2	ug/l	3		0.15 J		0.5 U		0.5 U	
75-35-4	1,1-Dichloroethene	E524.2	ug/l	7.5 J		0.79		0.5 U		0.5 U	
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.84		0.15 J		0.5 U		1.3	
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	2.1		0.67		0.5 U		0.5 U	
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		10	11	12	13	14	16	17	18	19	
Sample ID	MW-03I/RAB	MW-03S/RAB	MW-8D/RAB	MW-108D/RAB	MW-12S/RAB	SVP-1-1/RAB	SVP-1-2/RAB	SVP-1-3/RAB	SVP-1-4/RAB		
Location ID	MW-3I	MW-3S	MW-8D	MW-8D	MW-12S	SVP/GWM-1-1	SVP/GWM-1-2	SVP/GWM-1-3	SVP/GWM-1-4		
Location Name			Sample Date	9/20/2011	Start Depth	9/20/2011	End Depth	9/20/2011	Depth Unit	9/15/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5 U		5 U		5 U		5 U	
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.18 J		0.5 U		0.5 U		0.5 U	
79-01-6	Trichloroethene	E524.2	ug/l	58		6.2		0.97		1.2	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-47-6	O-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		20	21	22	23	24	25	26	27	28
Sample ID	SVP-1-5/RAB	SVP-1-6/RAB	SVP-1-7/RAB	SVP-1-8/RAB	SVP-1-9/RAB	SVP-1-10/RAB	SVP-2-1/RAB	SVP-2-2/RAB	SVP-2-3/RAB	
Location ID	SVP/GWM-1-5	SVP/GWM-1-6	SVP/GWM-1-7	SVP/GWM-1-8	SVP/GWM-1-9	SVP/GWM-1-10	SVP/GWM-2-1	SVP/GWM-2-2	SVP/GWM-2-3	
Location Name			Sample Date	9/15/2011	Start Depth	9/15/2011	End Depth	9/15/2011	Depth Unit	9/15/2011
CAS No.	Chemical	Method	Unit	Value Q	Value Q	Value Q	Value Q	Value Q	Value Q	Value Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U
100-42-5	Styrene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.23 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
108-88-3	Toluene	E524.2	ug/l	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U
108-90-7	Chlorobenzene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
110-82-7	Cyclohexane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
127-18-4	Tetrachloroethene	E524.2	ug/l	0.52	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	2.8
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	1.2	5.8
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.2 J
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	8.6	3.1	0.5 U	0.5 U	0.5 U	1.2	4
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
591-78-6	2-Hexanone	E524.2	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U
67-64-1	Acetone	E524.2	ug/l	5 U	5 U	5 U	5 U	5 U	5 U	5 U
67-66-3	Chloroform	E524.2	ug/l	0.32 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
71-43-2	Benzene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.28 J	0.5 U	0.5 U	0.5 U	0.5 U	0.17 J	0.2 J
74-83-9	Bromomethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
74-97-5	Bromochloromethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-09-2	Methylene Chloride	E524.2	ug/l	0.5 U	0.5 U	0.5 U	1.3	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5 U	0.5 UJ	0.5 U	0.5 UJ	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	E524.2	ug/l	1.4	0.45 J	0.5 U	0.5 U	0.5 U	1.3	0.94
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 U	0.5 U	0.5 U
75-69-4	Trichlorofluoromethane	E524.2	ug/l	29	18	0.37 J	0.5 U	0.5 U	98	24
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1.2	0.21 J
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	1	0.5 U	0.5 U	0.5 U	0.5 U	2.1	0.65
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		20	21	22	23	24	25	26	27	28	
Sample ID	SVP-1-5/RAB	SVP-1-6/RAB	SVP-1-7/RAB	SVP-1-8/RAB	SVP-1-9/RAB	SVP-1-10/RAB	SVP-2-1/RAB	SVP-2-2/RAB	SVP-2-3/RAB		
Location ID	SVP/GWM-1-5	SVP/GWM-1-6	SVP/GWM-1-7	SVP/GWM-1-8	SVP/GWM-1-9	SVP/GWM-1-10	SVP/GWM-2-1	SVP/GWM-2-2	SVP/GWM-2-3		
Location Name			Sample Date	9/15/2011	Start Depth	9/15/2011	End Depth	9/15/2011	Depth Unit	9/15/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5 U		5 U		5 U		5 U	
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-01-6	Trichloroethene	E524.2	ug/l	0.41 J		0.14 J		0.5 UJ		0.5 U	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-47-6	O-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 UJ		0.5 U	
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 UJ		0.5 U	

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		29	30	31	32	33	34	35	36	37	
Sample ID	SVP-2-4/RAB	SVP-2-5/RAB	SVP-2-6/RAB	SVP-2-7/RAB	SVP-2-8/RAB	SVP-2-9/RAB	SVP-2-10/RAB	SVP-3-1/RAB	SVP-3-2/RAB		
Location ID	SVP/GWM-2-4	SVP/GWM-2-5	SVP/GWM-2-6	SVP/GWM-2-7	SVP/GWM-2-8	SVP/GWM-2-9	SVP/GWM-2-10	SVP/GWM-3-1	SVP/GWM-3-2		
Location Name			Sample Date	Start Depth	End Depth	Depth Unit					
9/13/2011			9/13/2011	9/13/2011	9/13/2011	9/13/2011			9/14/2011	9/14/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
100-42-5	Styrene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5 U		5 U		5 U		5 U	
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
108-88-3	Toluene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
108-90-7	Chlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
110-82-7	Cyclohexane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
127-18-4	Tetrachloroethene	E524.2	ug/l	4.4		4		2.8		3.1	
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	9		8.3		7.9		0.71	
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.27 J		0.21 J		0.42 J		0.5 U	
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	0.44 J		0.38 J		0.48 J		0.38 J	
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
591-78-6	2-Hexanone	E524.2	ug/l	5 U		5 U		5 U		5 U	
67-64-1	Acetone	E524.2	ug/l	5 U		5 U		5 U		5 U	
67-66-3	Chloroform	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
71-43-2	Benzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
74-83-9	Bromomethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
74-87-3	Chloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
74-97-5	Bromo-chloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-00-3	Chloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-09-2	Methylene Chloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-25-2	Bromoform	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-34-3	1,1-Dichloroethane	E524.2	ug/l	0.2 J		0.18 J		0.17 J		0.5 U	
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.49 J		0.38 J		0.13 J		0.5 U	
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.45 J		0.5		0.74		0.65	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

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Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		29	30	31	32	33	34	35	36	37	
Sample ID	SVP-2-4/RAB	SVP-2-5/RAB	SVP-2-6/RAB	SVP-2-7/RAB	SVP-2-8/RAB	SVP-2-9/RAB	SVP-2-10/RAB	SVP-3-1/RAB	SVP-3-2/RAB		
Location ID	SVP/GWM-2-4	SVP/GWM-2-5	SVP/GWM-2-6	SVP/GWM-2-7	SVP/GWM-2-8	SVP/GWM-2-9	SVP/GWM-2-10	SVP/GWM-3-1	SVP/GWM-3-2		
Location Name			Sample Date	9/13/2011	Start Depth	9/13/2011	End Depth	9/13/2011	Depth Unit	9/14/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5 U		5 U		5 U		5 U	
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-01-6	Trichloroethene	E524.2	ug/l	32		45		30		17	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-34-5	1,1,2-Tetrachloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-47-6	O-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order	Sample ID	38	39	40	41	42	43	44	45	46	
Location ID	SVP-3-3/RAB	SVP-3-4/RAB	SVP-3-5/RAB	SVP-3-6/RAB	SVP-3-7/RAB	SVP-4-1/RAB	SVP-4-2/RAB	SVP-4-3/RAB	SVP-4-4/RAB		
Location Name	SVP/GWM-3-3	SVP/GWM-3-4	SVP/GWM-3-5	SVP/GWM-3-6	SVP/GWM-3-7	SVP/GWM-4-1	SVP/GWM-4-2	SVP/GWM-4-3	SVP/GWM-4-4		
Sample Date	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011		
Start Depth											
End Depth											
Depth Unit											
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
100-42-5	Styrene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.13	J
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5	U	5	U	5	U	5	U
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
108-88-3	Toluene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
108-90-7	Chlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.28	J	0.51	U
127-18-4	Tetrachloroethene	E524.2	ug/l	0.5	U	0.36	J	0.45	J	0.5	U
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	0.23	J	0.5	U	0.5	U	0.7	0.63
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	0.5	U	1.4		110		0.16	J
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.39	J
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.43	J
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.33	J
591-78-6	2-Hexanone	E524.2	ug/l	5	U	5	U	5	U	5	U
67-64-1	Acetone	E524.2	ug/l	5	U	5	U	5	U	5	U
67-66-3	Chloroform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	2.2	
71-43-2	Benzene	E524.2	ug/l	0.5	U	0.5	U	0.12	J	0.5	U
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.41	J	0.5	U	0.5	U	0.77	
74-83-9	Bromomethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
74-97-5	Bromo-chloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	2.3	
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	E524.2	ug/l	2.1		0.17	J	0.78		0.15	J
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	1.5	
75-69-4	Trichlorofluoromethane	E524.2	ug/l	8.5		0.12	J	0.5	U	0.5	U
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.5	U	1.3		1.2		0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		38	39	40	41	42	43	44	45	46	
Sample ID	SVP-3-3/RAB	SVP-3-4/RAB	SVP-3-5/RAB	SVP-3-6/RAB	SVP-3-7/RAB	SVP-4-1/RAB	SVP-4-2/RAB	SVP-4-3/RAB	SVP-4-4/RAB		
Location ID	SVP/GWM-3-3	SVP/GWM-3-4	SVP/GWM-3-5	SVP/GWM-3-6	SVP/GWM-3-7	SVP/GWM-4-1	SVP/GWM-4-2	SVP/GWM-4-3	SVP/GWM-4-4		
Location Name			Sample Date	9/14/2011	Start Depth	9/14/2011	End Depth	9/14/2011	Depth Unit	9/14/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5 U		5 U		5 U		5 U	
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-01-6	Trichloroethylene	E524.2	ug/l	16		0.84		0.76		0.13 J	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-47-6	O-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

VOC Analytical Results
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sample_group_order	Sample ID	Location ID	47	48	49	50	51	52	53	54	55
			SVP-4-5/RAB SVP/GWM-4-5	SVP-4-6/RAB SVP/GWM-4-6	SVP-4-7/RAB SVP/GWM-4-7	SVP-4-8/RAB SVP/GWM-4-8	SVP-4-9/RAB SVP/GWM-4-9	SVP-4-10/RAB SVP/GWM-4-10	SVP-5-1/RAB SVP/GWM-5-1	SVP-105-1/RAB SVP/GWM-5-1	SVP-5-2/RAB SVP/GWM-5-2
Location Name	Sample Date	Start Depth	End Depth	Depth Unit							
			9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/13/2011	9/14/2011	9/14/2011	9/14/2011
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
100-42-5	Styrene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	20 U		0.5 U		0.5 U		0.5 U	
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5		0.49 J		0.55		0.28 J	
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5 U		5 U		5 U		5 U	
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
108-88-3	Toluene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
108-90-7	Chlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
110-82-7	Cyclohexane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	20 U		0.5 U		0.5 U		0.5 U	
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
127-18-4	Tetrachloroethene	E524.2	ug/l	120		120		13		10	
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	4.4		4.3		1.5		0.76	
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	3.3		3.3		3.9		2	
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	20 U		0.5 U		0.5 U		0.5 U	
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
591-78-6	2-Hexanone	E524.2	ug/l	5 U		5 U		5 U		5 U	
67-64-1	Acetone	E524.2	ug/l	5 U		5 U		5 U		5 U	
67-66-3	Chloroform	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.27 J	
71-43-2	Benzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.23 J		0.17 J		0.5 U		0.5 U	
74-83-9	Bromomethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
74-87-3	Chloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
74-97-5	Bromochloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-00-3	Chloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-09-2	Methylene Chloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-25-2	Bromoform	E524.2	ug/l	20 U		0.5 U		0.5 U		0.5 U	
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-34-3	1,1-Dichloroethane	E524.2	ug/l	0.36 J		0.29 J		0.11 J		0.5 U	
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.14 J		0.16 J		0.5 U		0.5 U	
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	10		9.2		1.8		0.47 J	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

VOC Analytical Results
Baseline RA/Round 5
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Garden City, NY

sample_group_order		47	48	49	50	51	52	53	54	55	
Sample ID	SVP-4-5/RAB	SVP-4-6/RAB	SVP-4-7/RAB	SVP-4-8/RAB	SVP-4-9/RAB	SVP-4-10/RAB	SVP-5-1/RAB	SVP-105-1/RAB	SVP-5-2/RAB		
Location ID	SVP/GWM-4-5	SVP/GWM-4-6	SVP/GWM-4-7	SVP/GWM-4-8	SVP/GWM-4-9	SVP/GWM-4-10	SVP/GWM-5-1	SVP/GWM-5-1	SVP/GWM-5-2		
Location Name			Sample Date	9/13/2011	Start Depth	9/13/2011	End Depth	9/13/2011	Depth Unit	9/13/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5	U	5	U	5	U	5	U
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	E524.2	ug/l	47		55		49		18	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	20	U	0.5	U	0.5	U	0.5	U
95-47-6	O-Xylene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	20	U	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	20	U	0.5	U	0.5	U	0.5	U
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U

VOC Analytical Results
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Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order	Sample ID	56	57	58	59	60	61	62	63	64		
Location ID	SVP-5-3/RAB	SVP-5-4/RAB	SVP-5-5/RAB	SVP-5-6/RAB	SVP-5-7/RAB	SVP-5-8/RAB	SVP-5-9/RAB	SVP-5-10/RAB	SVP-6-1/RAB			
Location Name	SVP/GWM-5-3	SVP/GWM-5-4	SVP/GWM-5-5	SVP/GWM-5-6	SVP/GWM-5-7	SVP/GWM-5-8	SVP/GWM-5-9	SVP/GWM-5-10	SVP/GWM-6-1			
Sample Date	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011			
Start Depth												
End Depth												
Depth Unit												
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q	
100-41-4	Ethylbenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
100-42-5	Styrene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5	U	5	U	5	U	5	U	
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
108-88-3	Toluene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
108-90-7	Chlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
110-82-7	Cyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
127-18-4	Tetrachloroethene	E524.2	ug/l	0.59	J	0.48	J	0.41	J	0.22	J	
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	0.39	J	0.55	0.65	0.76	0.5	U	0.5	U
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	2.9	0.5	U	7.4	0.48	J	0.16	J	
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
591-78-6	2-Hexanone	E524.2	ug/l	5	U	5	U	5	U	5	U	
67-64-1	Acetone	E524.2	ug/l	5	U	5	U	5	U	5	U	
67-66-3	Chloroform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
71-43-2	Benzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
74-83-9	Bromomethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
74-87-3	Chloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
74-97-5	Bromo-chloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
75-00-3	Chloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
75-09-2	Methylene Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
75-25-2	Bromoform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
75-34-3	1,1-Dichloroethane	E524.2	ug/l	0.85	0.66	0.65	0.55	0.55	1.2	0.5	U	
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.38	J	0.5	U	
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.41	J	0.37	J	0.34	J	0.7	0.25	J
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	17		2.3		2.2		0.5	U	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	

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Garden City, NY

sample_group_order		56	57	58	59	60	61	62	63	64	
Sample ID	SVP-5-3/RAB	SVP-5-4/RAB	SVP-5-5/RAB	SVP-5-6/RAB	SVP-5-7/RAB	SVP-5-8/RAB	SVP-5-9/RAB	SVP-5-10/RAB	SVP-6-1/RAB		
Location ID	SVP/GWM-5-3	SVP/GWM-5-4	SVP/GWM-5-5	SVP/GWM-5-6	SVP/GWM-5-7	SVP/GWM-5-8	SVP/GWM-5-9	SVP/GWM-5-10	SVP/GWM-6-1		
Location Name			Sample Date	9/14/2011	Start Depth	9/14/2011	End Depth	9/14/2011	Depth Unit	9/14/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5 U		5 U		5 U		5 U	
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-01-6	Trichloroethylene	E524.2	ug/l	4.5		8		8.5		5.7	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-47-6	O-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

VOC Analytical Results
Baseline RA/Round 5
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Garden City, NY

sample_group_order		65	66	67	68	69	70	71	72	73	
Sample ID	SVP-6-2/RAB	SVP-6-3/RAB	SVP-6-4/RAB	SVP-6-5/RAB	SVP-6-6/RAB	SVP-7-1/RAB	SVP-7-2/RAB	SVP-7-3/RAB	SVP-7-4/RAB		
Location ID	SVP/GWM-6-2	SVP/GWM-6-3	SVP/GWM-6-4	SVP/GWM-6-5	SVP/GWM-6-6	SVP/GWM-7-1	SVP/GWM-7-2	SVP/GWM-7-3	SVP/GWM-7-4		
Location Name			Sample Date	9/14/2011	Start Depth	9/14/2011	End Depth	9/14/2011	Depth Unit	9/14/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
100-42-5	Styrene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	5	U	0.5	U
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.1	J	0.5	U
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5	U	5	U	5	U	5	U
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
108-88-3	Toluene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
108-90-7	Chlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	5	U	0.5	U
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	31	45
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	0.5	U	4.9	2.6	2.2	J	0.34	J
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	5	U	0.5	U
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	E524.2	ug/l	5	U	5	U	5	U	5	U
67-64-1	Acetone	E524.2	ug/l	5	U	5	U	5	U	5	U
67-66-3	Chloroform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.2	J
71-43-2	Benzene	E524.2	ug/l	0.5	U	0.5	U	0.15	J	0.5	U
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.58		2	6.9
74-83-9	Bromomethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
74-97-5	Bromo-chloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	E524.2	ug/l	0.5	U	0.5	U	0.3	J	0.5	U
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5	U	2.3		3.6		0.5	U
75-09-2	Methylene Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.55	U
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-34-3	1,1,1-Trichloroethane	E524.2	ug/l	0.5	U	0.34	J	64		87	0.88
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.69		2	15 J
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	J
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.5	U	0.5	U	0.22	J	0.58	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.47	J
										0.36	J

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		65	66	67	68	69	70	71	72	73	
Sample ID	SVP-6-2/RAB	SVP-6-3/RAB	SVP-6-4/RAB	SVP-6-5/RAB	SVP-6-6/RAB	SVP-7-1/RAB	SVP-7-2/RAB	SVP-7-3/RAB	SVP-7-4/RAB		
Location ID	SVP/GWM-6-2	SVP/GWM-6-3	SVP/GWM-6-4	SVP/GWM-6-5	SVP/GWM-6-6	SVP/GWM-7-1	SVP/GWM-7-2	SVP/GWM-7-3	SVP/GWM-7-4		
Location Name			Sample Date	9/14/2011	Start Depth	9/14/2011	End Depth	9/14/2011	Depth Unit	9/14/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5 U		5 U		5 U		5 U	
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-01-6	Trichloroethylene	E524.2	ug/l	0.5 U		2.3		0.35 J		0.64	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-47-6	O-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5 U		0.5 U		5 U		0.5 U	
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order	Sample ID	74		75		76		77		78		79		80		81		82	
		Location ID	SVP-7-5/RAB SVP/GWM-7-5	Location Name	SVP-7-6/RAB SVP/GWM-7-6	Sample Date	SVP-8-1/RAB SVP/GWM-8-1	Start Depth	SVP-8-2/RAB SVP/GWM-8-2	End Depth	SVP-8-3/RAB SVP/GWM-8-3	Depth Unit	SVP-8-4/RAB SVP/GWM-8-4	Sample Date	SVP-8-5/RAB SVP/GWM-8-5	Start Depth	SVP-8-6/RAB SVP/GWM-8-6	End Depth	SVP-9-1/RAB SVP/GWM-9-1
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
100-42-5	Styrene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
108-88-3	Toluene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
108-90-7	Chlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	E524.2	ug/l	0.5	U	0.5	U	6.6		20		26		21		29		2	0.5 U
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.22	J	0.61		0.26	J	0.22	J	0.16	J	0.5	U
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.28	J	0.34	J	0.4	J	0.5	U	0.5	U
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	E524.2	ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
67-64-1	Acetone	E524.2	ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
67-66-3	Chloroform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
74-97-5	Bromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		74	75	76	77	78	79	80	81	82	
Sample ID	SVP-7-5/RAB	SVP-7-6/RAB	SVP-8-1/RAB	SVP-8-2/RAB	SVP-8-3/RAB	SVP-8-4/RAB	SVP-8-5/RAB	SVP-8-6/RAB	SVP-9-1/RAB		
Location ID	SVP/GWM-7-5	SVP/GWM-7-6	SVP/GWM-8-1	SVP/GWM-8-2	SVP/GWM-8-3	SVP/GWM-8-4	SVP/GWM-8-5	SVP/GWM-8-6	SVP/GWM-9-1		
Location Name			Sample Date	9/14/2011	Start Depth	9/14/2011	End Depth	9/15/2011	Depth Unit	9/15/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5	U	5	U	5	U	5	U
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	E524.2	ug/l	0.24	J	0.5	U	1.6	4.8	1.5	0.99
79-20-9	Methyl Acetate	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
95-47-6	O-Xylene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		83	84	85	86	87	88	89	90	91	
Sample ID	SVP-9-2/RAB	SVP-9-3/RAB	SVP-9-4/RAB	SVP-9-5/RAB	SVP-9-6/RAB	SVP-9-7/RAB	SVP-109-7/RAB	SVP-9-8/RAB	SVP-9-9/RAB		
Location ID	SVP/GWM-9-2	SVP/GWM-9-3	SVP/GWM-9-4	SVP/GWM-9-5	SVP/GWM-9-6	SVP/GWM-9-7	SVP/GWM-9-7	SVP/GWM-9-8	SVP/GWM-9-9		
Location Name			Sample Date	Start Depth	End Depth	Depth Unit					
9/13/2011			9/13/2011	9/13/2011	9/13/2011	9/13/2011			9/13/2011	9/13/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
100-42-5	Styrene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.23 J		0.13 J		0.5 U		0.5 U	
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5 U		5 U		5 U		5 U	
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
108-88-3	Toluene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
108-90-7	Chlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
110-82-7	Cyclohexane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
127-18-4	Tetrachloroethene	E524.2	ug/l	0.31 J		1.3		10		6.5	
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	0.22 J		0.21 J		0.65		25	
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		9.9	
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	0.28 J		0.5 U		0.65		0.5 U	
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
591-78-6	2-Hexanone	E524.2	ug/l	5 U		5 U		5 U		5 U	
67-64-1	Acetone	E524.2	ug/l	5 U		5 U		5 U		5 U	
67-66-3	Chloroform	E524.2	ug/l	3.4		1.4		0.42 J		0.34 J	
71-43-2	Benzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.4 J	
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	2.5		1.4		0.17 J		0.22 J	
74-83-9	Bromomethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
74-87-3	Chloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
74-97-5	Bromo-chloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-00-3	Chloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-09-2	Methylene Chloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-25-2	Bromoform	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-34-3	1,1-Dichloroethane	E524.2	ug/l	12		7.6		0.41 J		0.77	
75-35-4	1,1-Dichloroethene	E524.2	ug/l	3.7		2.3		0.5 U		0.37 J	
75-69-4	Trichlorofluoromethane	E524.2	ug/l	10		0.87		0.61		3.1	
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.45 J	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.16 J		0.5 U		0.5 U		0.5 U	
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		83	84	85	86	87	88	89	90	91	
Sample ID	SVP-9-2/RAB	SVP-9-3/RAB	SVP-9-4/RAB	SVP-9-5/RAB	SVP-9-6/RAB	SVP-9-7/RAB	SVP-109-7/RAB	SVP-9-8/RAB	SVP-9-9/RAB		
Location ID	SVP/GWM-9-2	SVP/GWM-9-3	SVP/GWM-9-4	SVP/GWM-9-5	SVP/GWM-9-6	SVP/GWM-9-7	SVP/GWM-9-7	SVP/GWM-9-8	SVP/GWM-9-9		
Location Name			Sample Date	9/13/2011	Start Depth	9/13/2011	End Depth	9/13/2011	Depth Unit	9/13/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5 U		5 U		5 U		5 U	
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.3 J		0.5 U		0.5 U		0.5 U	
79-01-6	Trichloroethene	E524.2	ug/l	2.7		4.8		1.5		210	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-34-5	1,1,2-Tetrachloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-47-6	O-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		92	93	94	95	96	97	98	99	100	
Sample ID	SVP-9-10/RAB	SVP-10-1/RAB	SVP-10-2/RAB	SVP-10-3/RAB	SVP-10-4/RAB	SVP-10-5/RAB	SVP-10-6/RAB	SVP-110-6/RAB	SVP-10-7/RAB		
Location ID	SVP/GWM-9-10	SVP/GWM-10-1	SVP/GWM-10-2	SVP/GWM-10-3	SVP/GWM-10-4	SVP/GWM-10-5	SVP/GWM-10-6	SVP/GWM-10-6	SVP/GWM-10-7		
Location Name			Sample Date	Start Depth	End Depth	Depth Unit					
Sample Date	9/13/2011		Start Depth	9/13/2011		End Depth	9/13/2011		Depth Unit	9/13/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
100-42-5	Styrene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		25 U		0.5 U	
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5 U		0.5 U	0.22 J	0.17 J	12 J	0.32 J	0.5 U
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5 U		5 U		5 U		5 U	
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
108-88-3	Toluene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
108-90-7	Chlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
110-82-7	Cyclohexane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		25 U		0.5 U	
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
127-18-4	Tetrachloroethene	E524.2	ug/l	0.5 U	0.55	26	230	12 J	4.1	0.5 U	0.5 U
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	0.5 U	12	73	7.6 J	3.7 J	1.6	0.95	1
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5 U	0.2 J	0.6	1.6 J	12 U	0.5 U	0.5 U	0.5 U
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	0.5 U	0.2 J	0.5 U	0.38 J	18 J	17	0.5 U	0.5 U
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	12 U	0.5 U	0.5 U	0.5 U
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.25 U	12 U	0.5 U	0.5 U	0.5 U
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5 U	0.5 U	0.74	0.5 U	12 U	0.5 U	0.5 U	0.16 J
591-78-6	2-Hexanone	E524.2	ug/l	5 U		5 U		5 U		5 U	
67-64-1	Acetone	E524.2	ug/l	5 U		5 U		5 U		5 U	
67-66-3	Chloroform	E524.2	ug/l	0.5 U	0.5 U	1.2	0.33 J	12 U	0.5 U	0.5 U	0.5 U
71-43-2	Benzene	E524.2	ug/l	0.5 U	0.5 U	0.57	0.16 J	12 U	0.5 U	0.5 U	0.5 U
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.86	12 U	0.5 U	0.5 U	0.5 U
74-83-9	Bromomethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	12 U	0.5 U	0.5 U	0.5 U
74-87-3	Chloromethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	12 U	0.5 U	0.5 U	0.5 U
74-97-5	Bromochloromethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	12 U	0.5 U	0.5 U	0.5 U
75-00-3	Chloroethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	12 U	0.5 U	0.5 U	0.5 U
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	12 U	0.5 U	0.5 U	0.5 U
75-09-2	Methylene Chloride	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	12 U	0.5 U	0.5 U	0.5 U
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	12 U	0.5 U	0.5 U	0.5 U
75-25-2	Bromoform	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	25 U	12 U	0.5 U	0.5 U
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	12 U	0.5 U	0.5 U	0.5 U
75-34-3	1,1-Dichloroethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	1.6	12 J	0.17 J	0.5 U	0.5 U
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	6.1 J	12 U	0.5 U	0.5 U	0.5 U
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.5 U	2.5	3	0.15 J	12 J	2.7	0.15 J	0.12 J
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.5 U	0.19 J	0.59	36	3.6 J	1.8	0.5 U	0.13 J
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	12 U	0.5 U	0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U	12 U	0.5 U	0.5 U	0.5 U

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		92	93	94	95	96	97	98	99	100	
Sample ID	SVP-9-10/RAB	SVP-10-1/RAB	SVP-10-2/RAB	SVP-10-3/RAB	SVP-10-4/RAB	SVP-10-5/RAB	SVP-10-6/RAB	SVP-110-6/RAB	SVP-10-7/RAB		
Location ID	SVP/GWM-9-10	SVP/GWM-10-1	SVP/GWM-10-2	SVP/GWM-10-3	SVP/GWM-10-4	SVP/GWM-10-5	SVP/GWM-10-6	SVP/GWM-10-6	SVP/GWM-10-7		
Location Name											
Sample Date	9/13/2011		9/13/2011		9/13/2011		9/13/2011		9/13/2011		
Start Depth											
End Depth											
Depth Unit											
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5 U		5 U		5 U		5 U	
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5 U		0.5 U	0.24 J	0.5 U		0.5 U	
79-01-6	Trichloroethene	E524.2	ug/l	4.6		25		50		77 D	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5 U		0.5 U		0.5 U		12 U	
79-34-5	1,1,2-Tetrachloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		12 U	
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		25 U		12 U	
95-47-6	O-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		12 U	
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		12 U	
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5 U		0.5 U		25 U		12 U	
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		12 U	

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		101	102	103	104	105	107	108	110	111			
Sample ID	SVP-10-8/RAB	SVP-10-9/RAB	SVP-10-10/RAB	SVP-11-1/RAB	SVP-11-2/RAB	SVP-11-3/RAB	SVP-11-4/RAB	SVP-11-5/RAB	SVP-11-6/RAB				
Location ID	SVP/GWM-10-8	SVP/GWM-10-9	SVP/GWM-10-10	SVP/GWM-11-1	SVP/GWM-11-2	SVP/GWM-11-3	SVP/GWM-11-4	SVP/GWM-11-5	SVP/GWM-11-6				
Location Name			Sample Date	9/13/2011	9/13/2011	9/13/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011			
Start Depth			End Depth			Depth Unit							
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q		
100-41-4	Ethylbenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U		
100-42-5	Styrene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U		
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U		
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U		
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	5	U	0.5	U	0.5	U	0.5	U		
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U		
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	J	0.5	U		
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5	U	5	U	5	U	5	U		
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U		
108-88-3	Toluene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U		
108-90-7	Chlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U		
110-82-7	Cyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U		
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	5	U	0.5	U	0.5	U	0.5	U		
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U		
127-18-4	Tetrachloroethene	E524.2	ug/l	1.2	U	0.5	U	1.6	42	2	3.2		
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	6.1	J	0.13	J	0.5	U	6.5	10		
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.89	0.15	J	0.17	J	
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	4	J	0.22	J	0.5	U	0.5	U	0.19	J
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.37	J
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	5	U	0.5	U	0.5	U	0.5	U	0.18	J
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5	U	0.5	U	0.5	J	0.61	0.5	U	
591-78-6	2-Hexanone	E524.2	ug/l	5	U	5	U	5	U	5	U	0.29	J
67-64-1	Acetone	E524.2	ug/l	5	U	5	U	5	U	5	U	5	U
67-66-3	Chloroform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	1	0.5	U	
71-43-2	Benzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.64	0.5	U	
74-83-9	Bromomethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
74-97-5	Bromo-chloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	E524.2	ug/l	5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.36	J		
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	4.3	0.5	U	
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.19	J	0.5	U	0.5	U	0.56	0.5	U	
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.14	J	0.5	U	0.5	U	2.3	0.5	U	
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	1.1	0.5	U	
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		101	102	103	104	105	107	108	110	111	
Sample ID	SVP-10-8/RAB	SVP-10-9/RAB	SVP-10-10/RAB	SVP-11-1/RAB	SVP-11-2/RAB	SVP-11-3/RAB	SVP-11-4/RAB	SVP-11-5/RAB	SVP-11-6/RAB		
Location ID	SVP/GWM-10-8	SVP/GWM-10-9	SVP/GWM-10-10	SVP/GWM-11-1	SVP/GWM-11-2	SVP/GWM-11-3	SVP/GWM-11-4	SVP/GWM-11-5	SVP/GWM-11-6		
Location Name											
Sample Date	9/13/2011	9/13/2011	9/13/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	
Start Depth											
End Depth											
Depth Unit											
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5 U		5 U		5 U		5 U	
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-01-6	Trichloroethylene	E524.2	ug/l	49		1.2		0.58		230	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	5 U		0.5 U		0.5 U		0.5 U	
95-47-6	O-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	5 U		0.5 U		0.5 U		0.5 U	
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	5 U		0.5 U		0.5 U		0.5 U	
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		112	114	115	116	117	119	120	121	122	
Sample ID	SVP-11-7/RAB		SVP-11-8/RAB	SVP-11-9/RAB	SVP-111-9/RAB	SVP-11-10/RAB	SVP-12-1/RAB	SVP-12-2/RAB	SVP-12-3/RAB	SVP-12-4/RAB	
Location ID	SVP/GWM-11-7		SVP/GWM-11-8	SVP/GWM-11-9	SVP/GWM-11-9	SVP/GWM-11-10	SVP/GWM-12-1	SVP/GWM-12-2	SVP/GWM-12-3	SVP/GWM-12-4	
Location Name											
Sample Date	9/14/2011		9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/15/2011	9/15/2011	9/15/2011	9/15/2011	
Start Depth											
End Depth											
Depth Unit											
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
100-42-5	Styrene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	R	0.5	U
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5	U	5	U	5	U	5	U
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
108-88-3	Toluene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
108-90-7	Chlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	R	0.5	U
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	E524.2	ug/l	1.1	J	0.39	J	0.5	U	0.5	U
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	0.89		0.14	J	0.5	U	0.5	U
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	0.22	J	0.5	U	0.5	U	0.5	U
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	UJ
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	R	0.5	U
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	E524.2	ug/l	5	U	5	U	5	U	5	U
67-64-1	Acetone	E524.2	ug/l	5	U	5	U	5	U	5	U
67-66-3	Chloroform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
74-97-5	Bromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5	UJ	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	E524.2	ug/l	0.5	U	0.5	U	0.5	R	0.5	U
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	J
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.14	J	0.5	U	0.5	U	0.5	U
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.4	J
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.41	J
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		112	114	115	116	117	119	120	121	122	
Sample ID	SVP-11-7/RAB	SVP-11-8/RAB	SVP-11-9/RAB	SVP-111-9/RAB	SVP-11-10/RAB	SVP-12-1/RAB	SVP-12-2/RAB	SVP-12-3/RAB	SVP-12-4/RAB		
Location ID	SVP/GWM-11-7	SVP/GWM-11-8	SVP/GWM-11-9	SVP/GWM-11-9	SVP/GWM-11-10	SVP/GWM-12-1	SVP/GWM-12-2	SVP/GWM-12-3	SVP/GWM-12-4		
Location Name											
Sample Date	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/15/2011	9/15/2011	9/15/2011	9/15/2011	9/15/2011	
Start Depth											
End Depth											
Depth Unit											
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5 U		5 U		5 U		5 U	
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-01-6	Trichloroethene	E524.2	ug/l	9.1		1.7		0.3 J		0.3 J	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 R		0.5 U	
95-47-6	O-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 R		0.5 U	
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 R		0.5 U	
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order	Sample ID	123	124	125	126	127	128	129	130	131	
		SVP-12-5/RAB	SVP-12-6/RAB	SVP-13-1/RAB	SVP-13-2/RAB	SVP-13-3/RAB	SVP-13-4/RAB	SVP-13-5/RAB	SVP-113-5/RAB	SVP/GWM-13-6	
Location ID	SVP/GWM-12-5	SVP/GWM-12-6	SVP/GWM-13-1	SVP/GWM-13-2	SVP/GWM-13-3	SVP/GWM-13-4	SVP/GWM-13-5	SVP/GWM-13-5	SVP/GWM-13-6		
Location Name											
Sample Date	9/15/2011	9/15/2011	9/15/2011	9/15/2011	9/15/2011	9/15/2011	9/15/2011	9/15/2011	9/15/2011	9/15/2011	
Start Depth											
End Depth											
Depth Unit											
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
100-42-5	Styrene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5	U	5	U	5	U	5	U
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
108-88-3	Toluene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
108-90-7	Chlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	E524.2	ug/l	4.7	J	4.8	J	1.2	J	9.2	J
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	1.8	J	2.1	J	0.51	J	4.7	J
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	0.26	J	0.21	J	0.5	U	0.5	J
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5	UJ	0.5	UJ	0.5	U	0.5	U
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5	U	0.17	J	0.5	U	0.58	J
591-78-6	2-Hexanone	E524.2	ug/l	5	U	5	U	5	U	5	U
67-64-1	Acetone	E524.2	ug/l	5	U	5	U	5	U	5	U
67-66-3	Chloroform	E524.2	ug/l	0.35	J	0.43	J	0.5	U	0.66	J
71-43-2	Benzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.22	J
74-83-9	Bromomethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
74-87-3	Chloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	2.6	J
74-97-5	Bromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.15	J
75-25-2	Bromoform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	E524.2	ug/l	0.1	J	0.1	J	0.5	U	0.23	J
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.11	J	1.9	J
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.6	J	0.6	J	0.5	U	0.5	J
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.5	U	0.5	U	0.61	J	0.48	J
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5	U	0.5	U	0.17	J	0.5	J
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		123	124	125	126	127	128	129	130	131	
Sample ID	SVP-12-5/RAB	SVP-12-6/RAB	SVP-13-1/RAB	SVP-13-2/RAB	SVP-13-3/RAB	SVP-13-4/RAB	SVP-13-5/RAB	SVP-113-5/RAB	SVP-13-6/RAB		
Location ID	SVP/GWM-12-5	SVP/GWM-12-6	SVP/GWM-13-1	SVP/GWM-13-2	SVP/GWM-13-3	SVP/GWM-13-4	SVP/GWM-13-5	SVP/GWM-13-5	SVP/GWM-13-6		
Location Name			Sample Date	9/15/2011	Start Depth	9/15/2011	End Depth	9/15/2011	Depth Unit	9/15/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5 U		5 U		5 U		5 U	
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-01-6	Trichloroethene	E524.2	ug/l	20		25		8.9		3.2	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-47-6	O-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

		sample_group_order	132	133
CAS No.	Chemical	Method	Sample ID	SVP-14-1/RAB
100-41-4	Ethylbenzene	E524.2	ug/l	0.5 U
100-42-5	Styrene	E524.2	ug/l	0.5 U
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5 U
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5 U
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5 U
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5 U
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5 U
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5 U
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5 U
108-88-3	Toluene	E524.2	ug/l	0.5 U
108-90-7	Chlorobenzene	E524.2	ug/l	0.5 U
110-82-7	Cyclohexane	E524.2	ug/l	0.5 U
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5 U
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5 U
127-18-4	Tetrachloroethene	E524.2	ug/l	1.4
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	9.7
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5 U
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	0.5 U
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5 U
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5 U
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.23 J
591-78-6	2-Hexanone	E524.2	ug/l	5 U
67-64-1	Acetone	E524.2	ug/l	5 U
67-66-3	Chloroform	E524.2	ug/l	0.5 U
71-43-2	Benzene	E524.2	ug/l	0.5 U
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.5 U
74-83-9	Bromomethane	E524.2	ug/l	0.5 U
74-87-3	Chloromethane	E524.2	ug/l	0.5 U
74-97-5	Bromochloromethane	E524.2	ug/l	0.5 U
75-00-3	Chloroethane	E524.2	ug/l	0.5 U
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5 U
75-09-2	Methylene Chloride	E524.2	ug/l	0.5 U
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5 UJ
75-25-2	Bromoform	E524.2	ug/l	0.5 U
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5 U
75-34-3	1,1-Dichloroethane	E524.2	ug/l	0.5 U
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5 U
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.5 U
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.64
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5 U
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5 U

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order	132	133					
Sample ID	SVP-14-1/RAB	SVP-14-2/RAB					
Location ID	SVP/GWM-14-1	SVP/GWM-14-2					
Location Name							
Sample Date	9/19/2011	9/19/2011					
Start Depth							
End Depth							
Depth Unit							
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5	U	5	U
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5	U	0.5	U
79-01-6	Trichloroethene	E524.2	ug/l	60		17	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5	U	0.5	U
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5	U	0.5	U
95-47-6	O-Xylene	E524.2	ug/l	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5	U	0.5	U
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5	U	0.5	U

VOC Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order		135	136	138	139	140	142	143	144	146	
Sample ID	SVP-14-3/RAB	SVP-14-4/RAB	SVP-14-5/RAB	SVP-14-6/RAB	SVP-14-7/RAB	SVP-14-8/RAB	SVP-14-9/RAB	SVP-14-10/RAB	SVP-114-10/RAB		
Location ID	SVP/GWM-14-3	SVP/GWM-14-4	SVP/GWM-14-5	SVP/GWM-14-6	SVP/GWM-14-7	SVP/GWM-14-8	SVP/GWM-14-9	SVP/GWM-14-10	SVP/GWM-14-10		
Location Name			Sample Date			Start Depth			End Depth		
Sample Date	9/19/2011		Start Depth	9/19/2011		End Depth	9/19/2011		Depth Unit	9/19/2011	
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
100-42-5	Styrene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5 U		5 U		5 U		5 U	
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
108-88-3	Toluene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
108-90-7	Chlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
110-82-7	Cyclohexane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
127-18-4	Tetrachloroethene	E524.2	ug/l	0.5 U	1.4	4	1.1	0.51	0.5 U	0.5 U	0.25 J
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	0.5 U	1.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U				
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	0.5 U	0.21 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U				
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U				
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5 U	0.5 U	0.5 U	0.5 U				
591-78-6	2-Hexanone	E524.2	ug/l	5 U		5 U		5 U		5 U	
67-64-1	Acetone	E524.2	ug/l	5 U		5 U		5 U		5 U	7.3
67-66-3	Chloroform	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	6.9
71-43-2	Benzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
74-83-9	Bromomethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
74-87-3	Chloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
74-97-5	Bromo-chloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-00-3	Chloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-09-2	Methylene Chloride	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-25-2	Bromoform	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-34-3	1,1-Dichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.5 U	0.67	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	0.5 U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	0.5 U
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	0.5 U

VOC Analytical Results
Baseline RA/Round 5
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sample_group_order		135	136	138	139	140	142	143	144	146	
Sample ID	SVP-14-3/RAB	SVP-14-4/RAB	SVP-14-5/RAB	SVP-14-6/RAB	SVP-14-7/RAB	SVP-14-8/RAB	SVP-14-9/RAB	SVP-14-10/RAB	SVP-114-10/RAB		
Location ID	SVP/GWM-14-3	SVP/GWM-14-4	SVP/GWM-14-5	SVP/GWM-14-6	SVP/GWM-14-7	SVP/GWM-14-8	SVP/GWM-14-9	SVP/GWM-14-10	SVP/GWM-14-10		
Location Name											
Sample Date	9/19/2011		9/19/2011		9/19/2011		9/19/2011		9/19/2011		
Start Depth											
End Depth											
Depth Unit											
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5 U		5 U		5 U		3.1 J	
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-01-6	Trichloroethene	E524.2	ug/l	0.38 J		17		1.6		0.5 U	
79-20-9	Methyl Acetate	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
79-34-5	1,1,2-Tetrachloroethane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-47-6	O-Xylene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5 U		0.5 U		0.5 U		0.5 U	

VOC Field Blank Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
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sample_group_order	Sample ID	Location ID	Location Name	Sample Date	Start Depth	End Depth	Depth Unit	1	FB091211 BLANK	2	FB091311 BLANK	3	FB091411 BLANK	5	FB091511 BLANK	6	FB091611 BLANK	7	FB091911 BLANK	9	FB092011 BLANK
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q
100-41-4	Ethylbenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
100-42-5	Styrene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	UJ	0.5	U												
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	UJ	0.5	U												
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
108-88-3	Toluene	E524.2	ug/l	0.24	J	0.15	J	0.12	J	0.5	U										
108-90-7	Chlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
110-82-7	Cyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
127-18-4	Tetrachloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.36	J	0.5	U	0.5	U
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
179601-23-1	M,P-Xylene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
591-78-6	2-Hexanone	E524.2	ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U
67-64-1	Acetone	E524.2	ug/l	11		13		16		5	U	15		5	U	12					
67-66-3	Chloroform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
71-43-2	Benzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
74-83-9	Bromomethane	E524.2	ug/l	0.5	UJ	0.5	UJ	0.5	U												
74-87-3	Chloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
74-97-5	Bromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-00-3	Chloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-09-2	Methylene Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	UJ	0.5	U	0.5	U	0.5	U
75-25-2	Bromoform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-34-3	1,1-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U

VOC Field Blank Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
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sample_group_order	1	2	3	5	6	7	9
Sample ID	FB091211	FB091311	FB091411	FB091511	FB091611	FB091911	FB092011
Location ID	BLANK	BLANK	BLANK	BLANK	BLANK	BLANK	BLANK
Location Name							
Sample Date	9/12/2011	9/13/2011	9/14/2011	9/15/2011	9/16/2011	9/19/2011	9/20/2011
Start Depth							
End Depth							
Depth Unit							
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.5	U	0.5	U
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.5	U	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5	U	0.5	U
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5	U	5	U
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5	U	0.5	U
79-01-6	Trichloroethene	E524.2	ug/l	0.5	U	0.5	U
79-20-9	Methyl Acetate	E524.2	ug/l	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5	U	0.5	U
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5	U	0.5	U
95-47-6	O-Xylene	E524.2	ug/l	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5	U	0.5	U
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5	U	0.5	U

VOC Field Blank Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order	Sample ID	Location ID	Location Name	Sample Date	Start Depth	End Depth	Depth Unit	11	TB091211	12	TB091311	13	TB091411	14	TB091411A	15	TB091511	16	TB091511A	17	TB091611	18	TB091911	19	TB092011			
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	Value	Q	
100-41-4	Ethylbenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
100-42-5	Styrene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
10061-01-5	Cis-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
10061-02-6	Trans-1,3-Dichloropropene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
106-46-7	1,4-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
106-93-4	1,2-Dibromoethane (Edb)	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
107-06-2	1,2-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
108-10-1	4-Methyl-2-Pentanone (Mibk)	E524.2	ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	
108-87-2	Methylcyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
108-88-3	Toluene	E524.2	ug/l	0.27	J	0.22	J	0.16	J	0.5	U	0.11	J	0.11	J	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
108-90-7	Chlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
110-82-7	Cyclohexane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
120-82-1	1,2,4-Trichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
124-48-1	Dibromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
127-18-4	Tetrachloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
156-59-2	Cis-1,2-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
156-60-5	Trans-1,2-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
1634-04-4	Methyl Tert-Butyl Ether (Mtbe)	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
179601-23-1	M,P-Xylene	E524.2	ug/l	0.12	J	0.05	J	0.05	J	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
541-73-1	1,3-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
56-23-5	Carbon Tetrachloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
591-78-6	2-Hexanone	E524.2	ug/l	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	5	U	
67-64-1	Acetone	E524.2	ug/l	11		10		11		5	U	11		8.6		9.5		10		11								
67-66-3	Chloroform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
71-43-2	Benzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
71-55-6	1,1,1-Trichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
74-83-9	Bromomethane	E524.2	ug/l	0.5	UJ	0.5	UJ	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
74-87-3	Chloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
74-97-5	Bromochloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
75-00-3	Chloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
75-01-4	Vinyl Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
75-09-2	Methylene Chloride	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
75-15-0	Carbon Disulfide	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
75-25-2	Bromoform	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
75-27-4	Bromodichloromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
75-34-3	1,1-Dichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	
75-35-4	1,1-Dichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	

VOC Field Blank Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order	11	12	13	14	15	16	17	18	19
Sample ID	TB091211	TB091311	TB091411	TB091411A	TB091511	TB091511A	TB091611	TB091911	TB092011
Location ID	BLANK	BLANK	BLANK	BLANK	BLANK	BLANK	BLANK	BLANK	BLANK
Location Name									
Sample Date	9/12/2011	9/13/2011	9/14/2011	9/14/2011	9/15/2011	9/15/2011	9/16/2011	9/19/2011	9/20/2011
Start Depth									
End Depth									
Depth Unit									
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q
75-69-4	Trichlorofluoromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U
75-71-8	Dichlorodifluoromethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U
76-13-1	1,1,2-Trichloro-1,2,2-Trifluoroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U
78-87-5	1,2-Dichloropropane	E524.2	ug/l	0.5	U	0.5	U	0.5	U
78-93-3	2-Butanone (Mek)	E524.2	ug/l	5	U	2.4	J	5	U
79-00-5	1,1,2-Trichloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U
79-01-6	Trichloroethene	E524.2	ug/l	0.5	U	0.5	U	0.5	U
79-20-9	Methyl Acetate	E524.2	ug/l	0.5	U	0.5	U	0.5	U
79-34-5	1,1,2,2-Tetrachloroethane	E524.2	ug/l	0.5	U	0.5	U	0.5	U
87-61-6	1,2,3-Trichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U
95-47-6	O-Xylene	E524.2	ug/l	0.5	U	0.5	U	0.5	U
95-50-1	1,2-Dichlorobenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U
96-12-8	1,2-Dibromo-3-Chloropropane	E524.2	ug/l	0.5	U	0.5	U	0.5	U
98-82-8	Isopropylbenzene	E524.2	ug/l	0.5	U	0.5	U	0.5	U

Metals Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order	3	4	6	7	10	11	15	16	17
Sample ID	SVP-11-2/RAB	SVP-11-2F/RAB	SVP-11-4/RAB	SVP-11-4F/RAB	SVP-11-7/RAB	SVP-11-7F/RAB	SVP-11-10/RAB	SVP-11-10F/RAB	MW-12S/RAB
Location ID	SVP/GWM-11-2	SVP/GWM-11-2	SVP/GWM-11-4	SVP/GWM-11-4	SVP/GWM-11-7	SVP/GWM-11-7	SVP/GWM-11-10	SVP/GWM-11-10	MW-12S
Location Name									
Sample Date	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/14/2011	9/20/2011
Start Depth									
End Depth									
Depth Unit									
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q
7429-90-5	Aluminum	E200.7	ug/l	1950	J	304	J	915	J
7439-89-6	Iron	E200.7	ug/l	603		107		980	
7439-92-1	Lead	E200.7	ug/l	4.3	J	10	U	1.8	J
7439-95-4	Magnesium	E200.7	ug/l	2410	J	2210	J	4940	J
7439-96-5	Manganese	E200.7	ug/l	80.7	J	68.3	J	409	J
7439-97-6	Mercury	E245.2	ug/l	0.2	U	0.2	U	0.2	U
7440-02-0	Nickel	E200.7	ug/l	40	U	40	U	352	
7440-09-7	Potassium	E200.7	ug/l	5000	U	5000	U	5000	U
7440-22-4	Silver	E200.7	ug/l	10	U	10	U	10	U
7440-23-5	Sodium	E200.7	ug/l	38400		36500		45800	
7440-28-0	Thallium	E200.7	ug/l	25	U	25	U	25	U
7440-36-0	Antimony	E200.7	ug/l	60	U	60	U	60	U
7440-38-2	Arsenic	E200.7	ug/l	6.7	J	4.4	J	2.7	J
7440-39-3	Barium	E200.7	ug/l	55.1	J	28.7	J	46.1	J
7440-41-7	Beryllium	E200.7	ug/l	5	U	5	U	5	U
7440-43-9	Cadmium	E200.7	ug/l	0.23	J	0.21	J	0.19	J
7440-47-3	Chromium	E200.7	ug/l	3.1	J	10	U	65.2	
7440-48-4	Cobalt	E200.7	ug/l	50	U	50	U	8.7	J
7440-50-8	Copper	E200.7	ug/l	25	U	25	U	25	U
7440-62-2	Vanadium	E200.7	ug/l	3.5	J	2.4	J	50	U
7440-66-6	Zinc	E200.7	ug/l	59.2	J	55.7	J	984	
7440-70-2	Calcium	E200.7	ug/l	7640		7270		20500	
7782-49-2	Selenium	E200.7	ug/l	35	U	35	U	2.7	J
						2.1	J	35	U
						35	U	35	U
						35	U	35	U

Metals Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order	18	20	21	22	23	24	25	26
Sample ID	MW-12SF/RAB	SVP-14-1/RAB	SVP-14-2/RAB	SVP-14-2F/RAB	SVP-14-3/RAB	SVP-14-4/RAB	SVP-14-4F/RAB	SVP-14-5/RAB
Location ID	MW-12S	SVP/GWM-14-1	SVP/GWM-14-2	SVP/GWM-14-2	SVP/GWM-14-3	SVP/GWM-14-4	SVP/GWM-14-4	SVP/GWM-14-5
Location Name								
Sample Date	9/20/2011	9/19/2011	9/19/2011	9/19/2011	9/19/2011	9/19/2011	9/19/2011	9/19/2011
Start Depth								
End Depth								
Depth Unit								
CAS No.	Chemical	Method	Unit	Value Q	Value Q	Value Q	Value Q	Value Q
7429-90-5	Aluminum	E200.7	ug/l	299 R	230 J	228 J	202 R	200 UJ
7439-89-6	Iron	E200.7	ug/l	100 U	100 U	100 U	100 U	99.7 J
7439-92-1	Lead	E200.7	ug/l	10 U	10 U	10 U	10 U	10 U
7439-95-4	Magnesium	E200.7	ug/l	1060 J	2170 J	1920 J	2010 J	1350 J
7439-96-5	Manganese	E200.7	ug/l	15 U	18.9	22.8	24.9	30.2
7439-97-6	Mercury	E245.2	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
7440-02-0	Nickel	E200.7	ug/l	40 U	40 U	40 U	40 U	15.1 J
7440-09-7	Potassium	E200.7	ug/l	5000 U	2060 J	2380 J	1110 J	816 J
7440-22-4	Silver	E200.7	ug/l	10 U	10 U	10 U	0.59 J	10 U
7440-23-5	Sodium	E200.7	ug/l	16100 J	19600	23100	23300 J	14300
7440-28-0	Thallium	E200.7	ug/l	25 U	25 U	25 U	25 U	25 U
7440-36-0	Antimony	E200.7	ug/l	60 U	60 U	60 U	60 U	60 U
7440-38-2	Arsenic	E200.7	ug/l	10 U	10 U	10 U	10 U	10 U
7440-39-3	Barium	E200.7	ug/l	13 J	25.1 J	22.7 J	24.6 J	22.1 J
7440-41-7	Beryllium	E200.7	ug/l	5 U	5 U	5 U	5 U	5 U
7440-43-9	Cadmium	E200.7	ug/l	5 U	5 U	5 U	5 U	5 U
7440-47-3	Chromium	E200.7	ug/l	2 J	10 U	10 U	10 U	9.6 J
7440-48-4	Cobalt	E200.7	ug/l	50 U	50 U	50 U	50 U	50 U
7440-50-8	Copper	E200.7	ug/l	25 U	25 U	25 U	25 U	2.5 J
7440-62-2	Vanadium	E200.7	ug/l	50 U	50 U	50 U	50 U	50 U
7440-66-6	Zinc	E200.7	ug/l	60 U	89.4	46.5 J	43.9 J	148
7440-70-2	Calcium	E200.7	ug/l	13100	13800	11100	10900	7380
7782-49-2	Selenium	E200.7	ug/l	35 U	35 U	35 U	35 U	35 U

Metals Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order	27	28	29	30	31	32	33	34	35
Sample ID	SVP-14-6/RAB	SVP-14-7/RAB	SVP-14-7F/RAB	SVP-14-8/RAB	SVP-14-9/RAB	SVP-14-10/RAB	SVP-14-10F/RAB	SVP-114-10/RAB	SVP-114-10F/RAB
Location ID	SVP/GWM-14-6	SVP/GWM-14-7	SVP/GWM-14-7	SVP/GWM-14-8	SVP/GWM-14-9	SVP/GWM-14-10	SVP/GWM-14-10	SVP/GWM-14-10	SVP/GWM-14-10
Location Name									
Sample Date	9/19/2011	9/19/2011	9/19/2011	9/19/2011	9/19/2011	9/19/2011	9/19/2011	9/19/2011	9/19/2011
Start Depth									
End Depth									
Depth Unit									
CAS No.	Chemical	Method	Unit	Value	Q	Value	Q	Value	Q
7429-90-5	Aluminum	E200.7	ug/l	200	UJ	200	UJ	200	R
7439-89-6	Iron	E200.7	ug/l	100	U	100	U	100	U
7439-92-1	Lead	E200.7	ug/l	10	U	10	U	10	U
7439-95-4	Magnesium	E200.7	ug/l	4150	J	3930	J	4080	J
7439-96-5	Manganese	E200.7	ug/l	9.1	J	17.7		20.6	
7439-97-6	Mercury	E245.2	ug/l	0.2	U	0.2	U	0.2	U
7440-02-0	Nickel	E200.7	ug/l	40	U	40	U	40	U
7440-09-7	Potassium	E200.7	ug/l	1840	J	1680	J	308	J
7440-22-4	Silver	E200.7	ug/l	10	U	10	U	10	U
7440-23-5	Sodium	E200.7	ug/l	29200		30700		31300	J
7440-28-0	Thallium	E200.7	ug/l	25	U	25	U	25	U
7440-36-0	Antimony	E200.7	ug/l	60	U	60	U	60	U
7440-38-2	Arsenic	E200.7	ug/l	10	U	10	U	10	U
7440-39-3	Barium	E200.7	ug/l	45.5	J	45.9	J	48	J
7440-41-7	Beryllium	E200.7	ug/l	5	U	5	U	5	U
7440-43-9	Cadmium	E200.7	ug/l	5	U	5	U	5	U
7440-47-3	Chromium	E200.7	ug/l	10	U	10	U	10	U
7440-48-4	Cobalt	E200.7	ug/l	50	U	50	U	50	U
7440-50-8	Copper	E200.7	ug/l	25	U	25	U	25	U
7440-62-2	Vanadium	E200.7	ug/l	50	U	50	U	50	U
7440-66-6	Zinc	E200.7	ug/l	60	U	60	U	60	U
7440-70-2	Calcium	E200.7	ug/l	20500		20000		19700	
7782-49-2	Selenium	E200.7	ug/l	35	U	35	U	35	U

Metals Field Blank Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

			Sample ID Location ID	FB091411 BLANK	FB091411F BLANK	FB091911 BLANK	FB091911F BLANK	FB092011 BLANK	FB092011F BLANK
CAS No.	Chemical	analytic metho d	Unit	Value Q	Value Q	Value Q	Value Q	Value Q	Value Q
7429-90-5	Aluminum	E200.7	ug/l	200 UJ	200 UJ	200 UJ	200 R	200 UJ	200 R
7439-89-6	Iron	E200.7	ug/l	57.3 J	49.5 J	100 U	100 U	100 U	100 U
7439-92-1	Lead	E200.7	ug/l	7.8 J	7.6 J	10 U	10 U	11.7	10 U
7439-95-4	Magnesium	E200.7	ug/l	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
7439-96-5	Manganese	E200.7	ug/l	1.6 J	2 J	15 U	15 U	15 U	15 U
7439-97-6	Mercury	E245.2	ug/l	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
7440-02-0	Nickel	E200.7	ug/l	40 U	40 U	40 U	40 U	40 U	40 U
7440-09-7	Potassium	E200.7	ug/l	5000 U	5000 U	5000 U	5000 U	5000 U	5000 U
7440-22-4	Silver	E200.7	ug/l	10 U	10 U	10 U	10 U	10 U	10 U
7440-23-5	Sodium	E200.7	ug/l	857 J	810 J	976 J	663 J	1060 J	585 J
7440-28-0	Thallium	E200.7	ug/l	25 U	25 U	25 U	25 U	25 U	25 U
7440-36-0	Antimony	E200.7	ug/l	60 U	60 U	60 U	60 U	60 U	60 U
7440-38-2	Arsenic	E200.7	ug/l	10 U	10 U	10 U	10 U	10 U	10 U
7440-39-3	Barium	E200.7	ug/l	200 U	200 U	200 U	200 U	200 U	200 U
7440-41-7	Beryllium	E200.7	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
7440-43-9	Cadmium	E200.7	ug/l	5 U	5 U	5 U	5 U	5 U	5 U
7440-47-3	Chromium	E200.7	ug/l	1.2 J	10 U	10 U	10 U	10 U	10 U
7440-48-4	Cobalt	E200.7	ug/l	50 U	50 U	50 U	50 U	50 U	50 U
7440-50-8	Copper	E200.7	ug/l	10.7 J	7.3 J	25 U	25 U	15.2 J	14.7 J
7440-62-2	Vanadium	E200.7	ug/l	50 U	50 U	50 U	50 U	50 U	50 U
7440-66-6	Zinc	E200.7	ug/l	42.8 J	29.4 J	60 U	60 U	41.6 J	37.9 J
7440-70-2	Calcium	E200.7	ug/l	468 J	347 J	5000 U	5000 U	1140 J	866 J
7782-49-2	Selenium	E200.7	ug/l	35 U	35 U	35 U	35 U	35 U	35 U

Water Quality Parameter Analytical Results
Baseline RA/Round 5
Old Roosevelt Field Contaminated Groundwater Site
Garden City, NY

sample_group_order	133	136	140	144	146
Sample ID	SVP-14-2/RAB	SVP-14-4/RAB	SVP-14-7/RAB	SVP-14-10/RAB	SVP-114-10/RAB
Location ID	SVP/GWM-14-2	SVP/GWM-14-4	SVP/GWM-14-7	SVP/GWM-14-10	SVP/GWM-14-10
Location Name					
Sample Date	9/19/2011	9/19/2011	9/19/2011	9/19/2011	9/19/2011
Start Depth					
End Depth					
Depth Unit					
CAS No.	Chemical	Method	Unit	Value Q	Value Q
7664-41-7	Ammonia as N	E350.1	mg/l	0.221	0.0881 J
HARD	Total Hardness	E130.1	mg/l	36	27.6
TDS	Total Dissolved Solids	SM2540C	mg/l	108	116
TKN	Nitrogen, Total Kjeldahl	E351.2	mg/l	0.25 U	0.25 U
				0.25 U	0.25 U
				0.698	0.681